THE VETERINARY RECORD

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The Proposed Amalgamation of Societies.

The amalgamation of our existing professional Societies with the "National" is no new suggestion; but the scheme recently outlined by Prof. Bradley is so much more radical and attractive than any previous one that it may fairly be considered as a new proposal. Fully admitting that the principle of amalgamation is altogether commendable, we may briefly examine the most immediately evident practical difficulties.

Two objections to the broad principle of the scheme have been advanced, but neither is of real weight. A fear has been expressed that the amalgamated societies might become strong enough to usurp the powers and privileges of the R.C.V.S. This apprehension is groundless. All the legal powers and privileges that we, as a profession, possess are vested in our Council by our Acts and Charters, and could not be assailed by any amalgamation of the Societies. But amalgamation should render it infinitely more possible for the Council to ascertain the wishes of the profession on any point than is the case at present. The Councilmen, who are legally responsible to the profession, sometimes find it difficult to judge the views of the majority. The existing societies already give much assistance in this direction, but could certainly give more if successfully amalgamated. Under our Charters, we are a self-governing body, and amalgamation would aid us in realising that ideal.

Another and perhaps more wide-spread objection arises from the fear that the amalgamation might tend to lessen the individuality of local societies. No such result is probable—in fact, the exact contrary may be predicted. Each society, when transformed into a "branch" would preserve its individuality, would hold its own meetings, form its own opinions, and elect its own officers, exactly as at present. It would contribute to the funds of the central body, of which, in return, it would have a voice in the management. Far from lessening, amalgamation would actually increase the power and influence of a society. Even a strong association would gain in strength by becoming an individual unit of a far larger one.

No solid objection to the principle of amalgamation has yet been advanced. Many good reasons, on the other hand, have already been urged in its favour, and even more might be. But when we consider the details of any scheme of amalgamation, we are at once confronted by serious practical difficulties.

The chief of these, as usual, will be found to be the financial question. The effect which amalgamation would have upon the sum required from individual subscribers demands careful consideration. Here it must be said that a numerical estimate of the subscribing members of the different societies will be misleading, unless cognisance is taken of the section whose membership is confined to one local Society. A member of the "National" and one other Society would probably pay the same gross sum as at present. To one who is a member of the "National" and several local societies, the alteration would be an economical one. But many men only subscribe to one local society, and not to the "National," and to these the scheme would mean an increased expenditure. How many such members are there, and in what proportion would they support amalgamation?

Another undeniable difficulty would be the collection of subscriptions, which would necessarily be more rigorous in a large society than a small one. Indeed, it is questionable whether subscriptions, instead of being sent to the main body as suggested, would not be better collected by the treasurers of branches, who have more personal intercourse with the members. Subscription-collecting is a difficult question in existing societies, and might become more so under a scheme of amalgamation.

It would be folly to ignore such practical difficulties as these; we should court failure by doing so. A successful amalgamation of all our societies under the "National" would eventually be of incalculable benefit to the whole of the profession, but the practical details require most careful consideration.

DENTIGEROUS CYST IN TEMPORAL REGION.

In January last I had a case sent to me by a neighbouring practitioner for operation.

The subject was a well-bred Clydesdale gelding, two years old, and presenting an abnormal formation beneath the ear on the near side, and about the size of a billiard ball. A small open sinus discharged a nasty foul smelling fluid, similar in character to the well-known "boney" smell. With the exception of this sinus the skin was quite healthy. Although I suspected a cyst of the kind I could not give a decided opinion, and resolved to operate.

The animal was cast, and the sac opened up from the upper to the lower sides. This revealed a well-formed tooth with its characteristic whiteness. After laying bare and dissecting round the tooth, I made an attempt to dislodge it with large forceps, but it gave way. I found that it could not be taken away unless by sections.

I next passed a chain saw round the remainder of the projection, quite close to the bone, and began to saw it through. I found this very difficult owing to its position and hardness, but, after I had accom-

plished this, I removed the remainder in sections with tooth forceps. I found the sac to have a true cystic lining, which I carefully dissected out as I considered it essential to preventing the formation of another discharging sinus. After the tooth was removed a cup-like cavity of bone was left, and this I removed with ordinary bone forceps. After cleansing out the wound, and removing all the sharp portions of bone I had to excise a good portion of skin, as it was no longer required, and this also got rid of the unhealthy sinus.

As I castrate a number of horses of the cryptorchid class, I frequently come across a dentigerous cystic abdominal testicle, but this is the first one I have had presented to me with its situation in the temporal region. I have operated on several cysts in the facial sinuses, more particularly the frontal. I have found these to contain serum or pus, but never a tooth. I have found these cysts to be more common in fillies than colts, and would like to know if others have had the same experience.

I had the head of this subject photographed showing the wound sixteen days after the operation, and also the parts removed from the region. These will be seen to present all the characteristics of the true tooth, and the one on the upper corner of the photo, shows a well formed alveoli around the tooth.

The small tooth in the right lower corner was from an abdominal testicle.

Adrenal-eucaine was used as a local anæsthetic, and its action was admirable.

I trust that this article and the photographs will be of some interest to your readers, as I understand these cysts are somewhat rare.

Forfar. T. M. Inglis, M.R.C.VS.

CARCINOMA

Affecting the Parietal and Frontal Bones.

Subject.—A cob gelding, said to be 18 years old, used for van work.

History.—The animal was sent for treatment on February 22nd, having a tumour situated in the region of the frontal sinuses and extending up the parietal region. This tumour was soft to the touch, and fluctuated slightly in the centre; it was pyriform in shape, and the skin covering it was very thin and devoid of hair. A large raised base surrounded the tumour, and extended into the parietal region; this was very hard, and like the growth itself was tender on pressure. The tumour was said to have been growing slowly for about ten months, and produced no symptoms beyond occasional shaking of the head.

Exploration with trocar and canula revealed nothing beyond the information that the growth was extremely vascular, and extended deeply into the bones of the face and head. On an incision being made in the median line the tumour was found to consist of material resembling cerebral substance, together with thin, soft portions of bone at the deeper part. The underlying bones were soft and eroded, and hæmorrhage was profuse.

The owner was advised that operation was hopeless, but he insisted upon an attempt being made to remove the tumour.

I removed as much as possible, and found the base composed of a cartilaginous material. It was quite evident that to attempt removal of the growth in the parietal region would mean entering the cranial cavity. The animal staggered a few times after getting up.

The resulting wound was dressed daily with antiseptics from February 23rd to February 27th. On the latter date the animal after returning to his stall lay down and struggled violently, then became comatose and paralysed, and died on the same evening.

I regret that it was not possible to obtain the specimen of the skull until some days afterwards, so that an examination of the brain could not be carried out.

The destruction of the frontal and parietal bones was remarkable, as shown in the photo.

No. 1 shows the condition of the part on Feb. 27th, four days after a portion of the growth was removed. I regret that I had not an opportunity of taking a photo of the case prior to operation.

No. 2 shows the skull, after removal of the tissues by boiling.

Remarks.—The extensive erosion and destruction of the parietal bones renders it a surprising matter that the animal could have worked down to the day previous to being brought for treatment, and showed no symptoms.

Portion of the tumour was forwarded to Prof. Mettam, who kindly examined it and reported, "Carcinoma with abundance of dense fibrous tissue."

E. Wallis Hoare.

Cork.

THE UNTOWARD RESULT OF A HYPODERMIC INJECTION OF STRYCHNINE.

Last week I was summoned to attend a cow which was suffering from post-partum paralysis. The subject was of the usual type to be affected with this complaint, a good, quiet, thriving cow. She had calved a week previously, and showed typical symptoms of post-partum paralysis. When the other cows were let out to water she attempted to follow them, and could turn round in the stall dragging the hind limbs along the ground. All other functions were normal.

On arrival, I applied a counter-irritant to the lumbo-sacral region, and administered a dose of aromatic spirit of ammonia.

Eight hours later there was no very marked improvement, therefore I decided to employ strychnine, perhaps the most useful remedy in this class of case. Before going further, I might mention that the constipation so often seen in post-partum paralysis had been relieved by the owner, also that the animal urinated freely immediately after the dose of Spts. ammon. aromat. had been administered.

The hypodermic injection was given under the skin of the cervical region, and the dose was 5ijss. The solution was labelled to the effect that every 5ij. contained gr. j. strychnine, so that the cow only received gr. 1¼ strychnine. The owner and I stood near after the injection, and within ten minutes noticed a slight spasm, a movement like that made by an animal affected with syngultus.

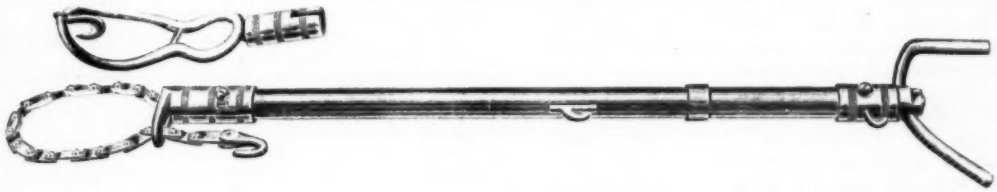
In alarm I administered a powerful dose of tinct. opii. and syrup chloral, and gave sedative hypodermic injections, but the patient began to froth at the mouth, and soon became unconscious; the corneal reflex was absent, and the spasms were of a most powerful character. Within fifteen minutes of the inception of the symptoms the animal was dead. Fortunately the owner was a well educated man, with some knowledge of pharmacy, so that he agreed that there were only two ways of accounting for the unfortunate action of the hypodermic injection, viz.:

1. That the solution contained more strychnine than was mentioned on the label.
2. Idiosyncrasy of the patient.

I have sent a specimen of the same solution to an analytical chemist, but in the meantime should be pleased to see a note in *The Record* if anyone else can recall to mind a case in which the hypodermic injection of strychnine gave unlooked for results.

L. L. Steele, M.R.C.V.S.

Beckermet, Cumberland.



NEW PARTURITION INSTRUMENT.

By the aid of the cutting chain any portion of the fœtus can be divided, the hocks, neck, body, or pelvic region. This chain lies hidden in the tube (*c*) until released close up to the object to be divided, thus reducing the danger to patient and operator. Each link can be removed for cleaning and sharpening. For the removal of a fore limb including scapula, leaving only the skin attached to the fœtus for future traction, the cutting chain is taken off and the guide with cross bar fixed on the tube in its place. The hook cuts the skin in advance of the bar, separating it as the limb is drawn through the looped guide. In a breech presentation with live fœtus the hock can be raised whilst the operator guides the foot.

Method of Use.—To use the cutting chain, withdraw the long screw, allowing the chain to be hidden in the tube, fixed there by the circular band. The hook just lies outside at the distal end to which you attach the cord which is around portion of fœtus to be cut through. Upon pulling the other end of the cord it naturally draws the instrument to where you want it. By then putting back the circular band and again pulling the cord or chain the cutting knife runs out of tube round the object to be cut. Now again insert the screw into the tube and fix the chain or rope on to the travelling hook.

With regard to the attachment of the loop guide for dissecting the fore limb, you will of course discard your cutting chain and the portion which it returns through, and place the guide on the same tube, putting the rope round the coronet of the fœtus, with someone to draw at same. Make an incision from four to six inches long between the knee and the fetlock, dividing the connective tissue until you can pass your finger completely round the same. Then pass the rope and leg through the loop head, with the bridge raised, allowing this bridge to follow your finger under the leg, that is, between the skin and the leg. Close the bridge down, which automatically fixes itself until the spring at the side is raised. Then fix the hook at the top, just under the skin, telling the assistant who will have fixed the rope to the travelling hook to wind, this will draw the leg through the loop, the hook dividing the skin, and the bar underneath breaking down all connective tissue and skinning the leg. When you have this a little way above the shoulder, you divide the skin completely at the fetlock, and continue winding until it drags the scapula completely away with the leg: there having been no traction on the mother.

W. J. Fletcher, M.R.C.V.S.

Chester Street, Wrexham.

ABSTRACTS FROM FOREIGN JOURNALS.

Bovine Trypanosomiasis in Germany.

Some concern has been aroused in German official veterinary circles by the discovery of a case of bovine trypanosomiasis—the first which has been observed in the country. The case occurred in Stein-Wingort, Wiesbaden, where an ox died, and a post-mortem examination was made by Morgenstern, a district veterinary surgeon.

The post-mortem appearances were numerous hæmorrhagic foci in the subcutaneous muscles and in all the organs, especially in the heart, with, in ad-

dition, sanguineous enteritis and slight swelling of the spleen.

Morgenstern forwarded some blood from a cervical vein, and a quantity of connective tissue in a condition of sanguineous infiltration, together with smear preparations taken at the time of the autopsy to Prof. G. Frank, of Wiesbaden, for microscopic examination.

In the juice from the connective tissue, beside numerous bacteria of different forms, Frank immediately found numerous living and very active trypanosomes. The tissue juice, preserved till the following day, still contained moving trypanosomes, which were, however, less active than on the first day, Trypanosomes were also found in the smears taken at the autopsy. Neither anthrax nor black quarter bacilli, both of which had been suspected, were demonstrated. Sections cut from the infiltrated connective tissue proved the presence of trypanosomes in the blood.

Frösch and Saffky, who afterwards examined Frank's preparations, both agree with him, not only that the trypanosomes undoubtedly caused the death of the ox, but also that the organisms must be regarded as a distinct species, differing from the varieties of trypanosomes hitherto recognised. Frösch (*Zeitschrift für Infections-krankheiten, parasitäre Krankheiten, und Hygiene der Haustiere*) points out marked structural differences between these trypanosomes and those of the rat.

The prevalence and distribution of these bovine trypanosomes and the disease they produce, and the further question of what animals other than cattle, if any, may act as their hosts, are matters for further enquiry.

It is somewhat suggestive that in Stein-Wingort there have been occasional isolated cases of illness in cattle, which have presented symptoms similar to anthrax or black-quarter.

Frank and Frösch therefore urge that all veterinarians should submit the blood of cattle suspected of these two diseases to microscopical examination, and that the investigation should be extended to dead wild animals such as deer.—*Berliner Tier. Wochenschrift.*

W. R. C.

WESTERN COUNTIES VETERINARY MEDICAL ASSOCIATION.

(*Concluded from p. 668.*)

STRANGLES.—By Mr. E. PERRY, M.R.C.V.S.

DISCUSSION.

The PRESIDENT: I think Mr. Perry is to be congratulated on the choice of such an interesting subject for his paper. Some time ago a rather peculiar sequel to a case of ordinary strangles in a chestnut hackney mare, aged seven years, came under my notice. This mare was the property of a gentleman who never uses her in any way. She was kept at grass, except when the weather was severe, when she was stabled and given hay and a small quantity of corn. I was first asked to see her in the spring of 1905, when she had a very mild attack of strangles, from which she apparently quickly recovered without any noticeable complications. From this time up to July of 1907, she had several attacks of colic, these attacks usually occurring when she came in from grass. Relief was always obtained by means of a colic draught.

On the 22nd of July of that year I was again asked to see her, when I found her to all appearance in excellent condition, but with a weak pulse and very anæmic mucous membranes. Her appetite was very capricious. I prescribed mineral and vegetable tonics, and under this treatment she improved considerably.

I was again called to see her on the 25th September. She had then markedly fallen off in condition; the pulse was very feeble and intermittent, and I could distinguished no definite heart sounds. Mucous membranes were blanched, mare quite off her feed, and I noticed that she moved her hind limbs in a very wooden manner. I continued the tonic medicine, with occasional stimulants, and her appetite after a time returned, but the stiffness of the hind limbs increased.

On 28th November the anæmia was most pronounced, pulse almost imperceptible, temperature 98. Well-marked dropsical swellings extending from the lower part of the neck to the udder. Urine continually trickling away. Stiffness of the hind limbs most marked, and the extremities very cold.

The condition of the hind limbs made me suspect thrombosis, so I examined the iliac arteries (per rectum), and could feel no pulsation in the right artery, and very little in the left. I saw further treatment was useless, so wrote the owner to that effect, and in reply he told me to do what I liked with her. I made arrangements to destroy her on the 30th. On arrival I found her down and dying. I hastened death by opening the carotid artery, and the amount of blood that escaped could not have exceeded 60 ounces in quantity, and was very watery in appearance.

On removing the skin a large quantity of dropsical fluid escaped. The thorax contained no fluid, and the abdominal cavity about 40 ounces.

Conditions of organs.—Heart considerably enlarged, its base being 12½ inches and the length from base to apex 16 inches. The muscular tissue had a parboiled appearance, and on opening the cavities the endocardium for about two-thirds of its area was covered with a verrucose growth of cauliflower-like appearance, the individual growths varying in size from that of a pea to that of a large walnut. Some of the growths had a well-defined pedicle. The endocardium covering the valves was most affected.

Lungs pallid, but otherwise normal: Posterior aorta—about one inch anterior to the great mesenteric artery I found an aneurism of the size of a duck's egg, with very thin walls: Mesenteric arteries—A good many were partially occluded by thrombi, some of which could only with difficulty be removed from the blood vessels: Renal arteries—The right entirely blocked, the left partially so, by thrombi: Kidneys very pallid on section, and showed well-defined areas of infarction: Internal iliac arteries—The right was totally occluded by a thrombus four inches in length, which on section was grey in colour, had a stratified appearance, and was gritty to the touch. The left was partly blocked, the thrombus having a small channel through the centre.

Bowels normal in appearance. I made a thorough exploration for parasites, but found none. Stomach normal. Liver slate-coloured on section, and had a macerated appearance. Spleen very small, but otherwise normal.

I concluded that the endocarditis was set up by the strangles streptococcus; and that the thrombosis, with subsequent infarction of the kidneys, was due to detached

portions of the endocardial growths entering the circulation and becoming arrested in the arteries.

I should like to ask Mr. Perry if he has ever come across a case of strangles in a human being, because some time ago a client of mine, after having opened a strangles abscess with his finger, became seriously ill; and parts of the body, including the testicles, became very enlarged; the medical man who attended him said he had no doubt that this resulted from strangles.

Mr. BOND: I should like to add my quota of thanks to Mr. Perry. He speaks of the commonness of strangles, but all I can say is that I have not seen many cases in recent years; the disease is apparently dying out, and is not so widely distributed as it used to be. Farmers now-a-days, come to market by train and motors and do not bring their horses into the town yards in such numbers as they used to do, and thus one great source of contagion is removed. With regard to the question of a case being strangles without there being an abscess under the jaw, I always understood you could not have the disease without it.

In connection with infection, it may be interesting to mention a little experiment I made about five or six years ago; I kept all the discharges from some cases of strangles I had under treatment and made them up into balls with bran, etc., and fed a pony and a horse of my own with these to see if I could give them strangles; they, however, seemed to thrive on the treatment and continued to do their work well.

I quite agree with the essayist that it is unwise to open an abscess until it is ripe, it seems to be an insult to nature to do so, and is, in my opinion, a very common cause of secondary strangles. I always advise excercise as soon as possible, as the muscles of the larynx are softened if allowed to lie fallow too long, and many cases of whistling and roaring result from this cause. Exercise brings back the muscles and give them proper tone. I have never known a man develop an abscess, but I have heard men complain that they feel lax and generally uneasy, and like the attendants in cases of cow pox, they do not care to carry out one's instructions.

As to treatment; I generally give a ball of quinine twice a day, but it is difficult now-a-days to find men who can give balls properly. Salts are beneficial, and open-air is decidedly good; this we can see in the case of young racing stock, which get little or no other treatment, than plenty of fresh air. I remember once seeing two young colts deliberately break abscesses under their jaws by scratching them over a thorn fence, as if nature had prompted them what to do.

Mr. ELDER: I thank Mr. Perry for his paper on a subject about which all of us know something. In practice (like Mr. Bond) I don't see many cases now, owing partly, I believe, to modern improved ideas on hygiene, and to more care being taken to prevent contagion. The cases I now treat are usually secondary strangles, the most common complication being mesenteric abscesses. With regard to treatment; if out, grass is all very well, but if in, I prefer crushed oats, bran, steamed hay, etc., and never advise grass, as I fancy the latter leaves the patient more debilitated. Purpura is not so likely to follow if fed on good sound crushed oats and steamed hay.

Mr. COLLINGS: I thank Mr. Perry for his instructive and interesting records of secondary cases. I quite agree with not opening the abscesses, as if left to nature we do not get nearly so many secondary cases. I do not think roaring and whistling is so common a sequel when the abscess is in the sub-maxillary region as when it is in the parotid glands. I should like to ask Mr. Perry what treatment he advocates with deep-seated parotid abscesses? They are very difficult to open because of the danger to the large surrounding vessels. The swellings, being very hard, are awkward to get rid of.

Mr. BLOYE: Mr. President and gentlemen, I feel a sort of fatherly interest in this paper, because some fifteen years ago I had the privilege and pleasure of working with Mr. Perry; I am glad to see him here to-day as our essayist, and I certainly think he has justified his position. I notice Mr. Perry mentions Gram's method of staining and Gram's only, I may say that all the aniline dyes stain the organisms. There appears to be a difference of opinion among the best pathologists, at home and abroad, as to the identity of strangles with other diseases; some are of opinion that strangles and contagious pneumonia are the same disease, and further that many cases of supposed strangles are nothing more than ordinary catarrh. Sir John M'Fadyean has pronounced that in all discharges in catarrh of the respiratory mucous membranes an organism is present which is not to be distinguished from the streptococcus of Schütz. If this organism be the cause, it has only to get into the lymph stream to set up abscesses. The point I wish to emphasise is that there is a doubt as to the differentiation of these diseases.

Coming to treatment, Mr. Perry is right to endeavour to mature an abscess quickly; to this end he advises poultices, now I think a poultice to a horse's throat is an abomination; it sags, gets cold and is practically impossible to keep in position; hot fomentations and hot felt packs are distinctly much better. I am strongly of opinion that blistering at once is the best method of bringing an abscess to a head, and that the earlier the pus is evacuated the better, as the temperature immediately goes down and the appetite generally returns. The great disadvantage of early lancing is the risk of secondary strangles and pyæmia. I always endeavour to avoid this by the use of iodine injections, which I am pleased to hear Mr. Perry also advocates.

Why did not the mare show pain? Probably because in this case there was a large abscess which burst and set up diffused peritonitis. Abscesses beside the anus are not so very uncommon, as I have seen at least two such cases.

I should say your case of human strangles, Mr. President, was one of mixed infection; but seeing how common the disease is, I think it reasonable to suppose that cases in the attendants may occur.

With regard to roaring, I do not think it is claimed that abscesses in the sub-maxillary or parotid regions have much bearing on this sequel; it is generally put forward that it is caused by pressure of the left bronchial gland on the left recurrent nerve.

Mr. BOVETT: I am afraid, Mr. President, that I have very few words to add to this discussion. Like Mr. Bond and Mr. Elder, I do not now come in contact with many cases of strangles. Directly I see an abscess threatening I select a likely spot, take off the hair about the size of half-a-crown, and blister, and when pus is present I open as soon as possible. I don't think there is loss of appetite so much as inability to feed in cases of strangles. In the treatment I think fluid medicine preferable to balls, as it is easier to swallow.

Mr. W. PENHALE: Mr. Perry has given us an able paper on a very interesting subject; I have nothing new to add as I have seen few cases lately. I have a case now under treatment to which I was called about a week ago; the abscess was ripe, as we call it, and I opened it, and thought it would go on allright; three days ago I was again called in, when I found a large swelling in the parotid gland, I don't regard it as ready for the lance as yet, and am waiting developments. I have tried anti-streptococcus serum, but it has not been successful in my hands. Has Mr. Perry had any experience in the use of this serum as a preventive? as some of my clients are talking largely about i ts use for that purpose, and also for the cure of incipient cases. I could easily follow Mr. Perry in his description of the abscesses in the

rectum, shoulder, and udder, as I have treated such cases. We do not get many deaths from this disease. I do not agree with balls, neither with much drenching in the treatment of strangles, but prefer to give medicine in the drinking water or milk, or on the tongue in the form of an electuary.

Mr. R. E. L. PENHALE: I have much pleasure in thanking Mr. Perry for his common-sense and practical paper, and must congratulate him on the exhaustive discussion it has provoked. We certainly do not get so many cases of strangles now as we did in former years, due probably to better hygiene. I think fresh air and pure water most important in the treatment of the disease, and I agree with Mr. Perry that green stuff is the best food, or at least that has been my experience. I fancy drenching is more successful than giving balls.

Mr. WM. PENHALE: I should like to ask Mr. Perry if he considers strangles to be a contagious disease, as the other night I was reading "Old W. Williams" and he says it is not so.

In replying Mr. Perry said: With regard to Mr. Gillam's query, I have never seen or heard of a case of human strangles; surely if it is contagious to human beings we should have had a lot of cases on record. I am surprised to hear that Mr. Bond and others get no cases, for with me they are very common indeed, principally from dealers' stables. I have always been taught that you can have strangles without an abscess in the sub-maxillary space, but I never diagnose a case as such unless there is an abscess; I agree that exercise during convalescence is beneficial. With all due regard to Mr. Elder's opinion, I must say that I have found grass to be the best food, as horses will often eat this when everything else has been refused. I do not believe in drenching in cases of high temperature, but always give quinine in balls. I can't agree that drenching is desirable, as there is a risk of some of the fluid going the wrong way and setting up violent coughing. I agree with Mr. Bloye that poultices are rather messy, and that hot fomentations and blisters are good. I think the theory as to roaring mentioned by Mr. Bloye is the generally accepted one. I repeat that I do not now like to open a strangles abscess until it is thoroughly formed. In reply to Mr. Penhale, I do not know anything about antistreptococcus serum, either as a preventive or curative. I am of opinion that strangles are most contagious. I thank you, gentlemen, for the very kind way you have received my paper.

In moving a vote of thanks to Mr. Perry, Mr. Bloye said: When first I heard that Mr. Perry was proposed for membership, I ventured the opinion that he would be an acquisition to our Association, and he has proved to be so.

In seconding, Mr. Ascott said one important fact had been elicited during the discussion. viz., that there is still a difference of opinion as to whether strangles is, or is not a contagious disease. The resolution was carried unanimously.

A hearty vote of thanks, proposed by Mr. Bond, seconded by Mr. R. E. L. Penhale, was accorded the retiring President for the great interest he had taken in the work of the Association during his year of office—which has been a very busy one.

WM. ASCOTT, Hon. Sec.

Mr. J. J. BELL, V.S., has been confined to the house for four or five weeks, but is now recovered and able to move about.

At a Council meeting of the Cumberland Agricultural Society held at the Great Central Hotel on Saturday last, Mr. J. D. Wright was unanimously re-appointed Chairman, and Mr. John J. Bell, V.S., Vice-chairman for the ensuing year.

THE CENTRAL VETERINARY MEDICAL SOCIETY.

THE DISEASES OF THE EYE IN DOMESTICATED ANIMALS.*

By HENRY GRAY, M.R.C.V.S., Kensington.

THE ORBIT

Injuries to the orbit, produced by blows, bites, or in the horse, by banging the head on the hard ground when suffering from colic or when accidentally or purposely cast, may consist of fracture of the orbital process with ultimate necrosis and exfoliation of a small plate of bone giving rise to a fistula, which remains until the loosened portion of bone is removed; of malignant œdema which spreads to the eyeball and surrounding tissues, reaches the brain and causes death; simple œdema, abscess; loss of cutaneous, and subcutaneous tissue, with consequent cicatricial retraction of the eyelid; paralysis of the eyelid (ptosis) in consequence of the supra-orbital nerves being injured.

New growths and the infective granulomata may also attack the orbit. They may be either primary or secondary in origin. When of the latter origin they usually extend from the cranium, nasal chambers or their sinuses, and the neighbouring lymphatic glands. In the ox exostoses, tuberculosis and actinomycosis are the commonest pathological entities. In the horse, carcinomata, odontomata, and sarcomata. In the dog and cat, tuberculosis, carcinomata and sarcomata.

The parasitic cysts may be encountered in the orbit of all species of the domesticated animals; but the rabbit and pig are more subject to them than any others.

THE EYELIDS.

Wounds in the eyelids may be produced by such injuries as are mentioned above when treating upon those of the orbit.

Treatment.—They should be treated on general surgical principles. On no account should flaps of living skin or tissue be removed, as the reparative process in such parts is very active and complete when the raw edges are brought together by means of silk or metallic sutures. When silk is used it may be necessary to use two or three series of sutures, viz., one of stout silk passed through the whole thickness of the substance forming the wound; another, of fine silk passed only through the skin; and perhaps a third passed through the mucous membrane only. It is needless to say sutures should be interrupted and not continuous. In neglected wounds, where the skin has been allowed to heal up and cover the free edges of the breach of continuity so as to form a fissure, autoplasty may be performed with every guarantee of success, even after years have elapsed since the injury. The same remarks apply to congenital fissures or gaps in the eyelids (colomba) so often seen in sporting dogs, and sometimes in foals.

PARASITIC DISEASES OF THE EYELIDS.

Ringworm and follicular and sarcoptic scabies often affect the eyelids when other parts of the body are attacked; but in the case of follicular mange, it may be confined to these organs.

The diseases may be safely treated by the use of the milder mercurial ointments; but in the case of the small acneiform abscesses of follicular scabies it may be advisable to puncture the pustules and wash them out with 1-1000-500 solution of the bichloride or the bin-

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*Presented at the Meeting of the Central V.M.S. at the Royal College of Veterinary Surgeons, 10 Red Lion Square, London, W.C., on Thursday, April 1st, 1909.

iodide of mercury. Lice situated on the eyelids may be got rid of by an inunction of stavesacre ointment.

Eczema of the Eyelids.

This may be treated on similar lines to those of the parasitic diseases just mentioned. But if there should be much irritation, evidenced by the animal rubbing its head on some obstacle, or scratching the irritable part with its paw, this should be allayed by the addition of cocaine, atropine, or extract of belladonna to the ointment for application to the eyelid.

Baldness or loss of hair on the eyelids is benefited by mild mercurial ointments. Both eczema and baldness of the eyelids are sometimes, but erroneously, termed, in veterinary ophthalmic surgery, blepharitis.

Blepharitis, that is, inflammation of the follicles of the eyelashes, is rarely seen in our domesticated animals. It is true the free borders of the eyelids become abraded and even ulcerated in canine distemper; but the disease is not confined to the hair follicle—it only affects it secondarily.

Meibomian Cyst (Chalazion).

This is a chronic disease of one of the Meibomian glands, which forms a hard circumscribed 'swelling,' gradually enlarging for months until it reaches the size of a pea or small marble. It resembles a sebaceous cyst in nature and very often, when left alone, gives rise to a wart-like excresence. It is a common complaint in the dog, especially when of mature age, and is usually situated on the free border of the upper eyelid.

In my experience the quickest and surest method of treatment is to excise a small triangular portion of the whole thickness of the eyelid, including the tumour, taking care the base of the triangle is at the free edge of the lid. The resulting small wound may either be sutured or left alone, when the remaining gap fills up in about a week without leaving any blemish. I have found this method to be better than using a Volkmann's curette to scoop out the tumour, which, if any be left behind, grows again.

Warts (Papillomata).

Warts are very often seen on the eyelids of the ox, horse, and sometimes, dog. They are best removed by the scissors, and the resulting wound cauterised deeply with nitrate of silver. In the dog, I find the electric cautery a handy, safe and cleanly means of removing them.

Ptosis or Blepharoptosis.

This consists of an inability to raise the upper eyelid, which falls over the front of the eyeball. In our domestic animals it usually arises from an injury to that branch of the third nerve which supplies the levator. In the horse, it generally results from bruising of the soft tissues in the supra-orbital region, or fracture of the orbital process of the frontal bone. It is also seen in psammomatous growths in the lateral ventricles, tumours pressing on the cerebrum or cerebellum, especially those that take their origin from the teeth, and then reach the brain *via* the supermaxillary and frontal sinuses, causing absorption of the external bone plates *en route*. It may also be seen when the upper eyelid is the seat of a new growth, which is so weighty that it produces over-tiring of the levator. In the ox it is seen in certain cases of cerebral tuberculosis. In the dog, in some cases of chronic cerebral meningitis arising as a complication or sequel of distemper.

Blepharophimosis.

This is a narrowing of the palpebral fissure, which gives the eye a small appearance. It is commonly seen in small toy dogs, especially the Pomeranian and the Japanese spaniel.

It may be remedied by dividing the entire thickness of the external commissure and then suturing the divided mucous membrane to the divided skin.

Trichiasis.

This term is applied to a condition in which the upper eyelashes or hairs near the free border of the eyelid are so distorted that they overlap and come in contact with the cornea. It is commonly seen in pet dogs such as the Toy Pomeranian and the Japanese spaniel; occasionally in the cat, rarely in the horse, and still more rarely in the other domesticated animals. The term Distichiasis is applied to that condition where there are two rows of eyelashes, one of which inclines backward and the other forward. It is a rare if not an unknown anomaly in our domesticated animals.

The effects of the hairs rubbing on the cornea are lachrymation, pain, dread of light, congestion of the conjunctiva and cornea, with a smokiness, opaqueness or abrasion of this latter membrane. I have, however, frequently seen very slight or no symptoms.

The only reliable treatment is either excision of a small transverse elliptical or crescentic portion of the skin and of the orbicularis muscle, a short distance from the free border of the eyelid; or a deep incision through the skin, muscle and membranes at the outer canthus of the eye and afterwards suturing back the eyelid. This latter is advisable in very small and young toy-dogs; it not only removes the trouble but also widens the palpebral fissure so as to give the eye a bolder and brighter appearance. There is no need to suture the wound, which heals up rapidly without leaving any blemish. If advisable both operations may be performed at the same time.

Entropium.

This is a turning inward of the eyelid. It is a very common condition in retrievers, setters, bulldogs, and chows, and is occasionally encountered in the cat, horse, and other animals. In pet dogs, such as the toy Pomeranian and the Japanese spaniel, it chiefly affects the upper lid; in sporting dogs, such as the retriever, principally the lower lid; and in the bulldog, chow and cat it mostly occurs in both lids. It may be produced by spasm of the orbicularis, or by a cicatrical contraction of the conjunctival membrane. It is sometimes associated with granular conjunctivitis or an ulcerated cornea.

The symptoms it produces are similar to those due to trichiasis. When both eyelids turn inwards they generally do so more at their outer angle than at the inner.

The treatment for small and young toy dogs should be a deep incision of the outer canthus, with suturing up of a fold of skin above the eyelid. If necessary, excision of an elliptical or crescentic portion of skin and orbicularis muscle with suturing up of the free edges of the resulting wound should be carried out. In adult and large animals, excision of a good sized crescentic fold of skin and orbicularis muscle is advisable. Care should be taken not to excise too much, lest a disfigurement of the free border of the eyelid remains after cicatrisation has taken place. In the case of incurvation of both eyelids with intense spasm and a too narrow palpebral fissure although the borders of the eyelids seem lengthy, a deep and wide division of the external canthus, together with excision of an elliptical or crescentic portion of skin and orbicularis muscle above the upper and below the lower eyelids may be necessary to prevent a recurrence of this anomaly.

Ectropium.

This is the opposite condition to entropium. It consists in the turning of the eyelid outward. It varies in degree from a very slight deviation to almost an eversion at right angles.

UMI

It is usually due, when occurring in the upper eyelid of the horse, to cicatricial contraction of wounds over the orbit, produced by banging the head on the hard ground in cases of colic, or when cast in the stall or loose-box. In the dog it is sometimes the result of cicatricial contraction of wounds due to bites. Occasionally, both in the cat and dog, it arises from too much skin and muscle being excised in the operation for entropium. In the bulldog it originates from thickening of the conjunctiva, due to a granular condition of the inner surface of the lids and also of the membrana nictitans.

In the dog it may be congenital, and in certain breeds, such as the bloodhound, fox-hound, St. Bernard, setter, retriever, and spaniel, it is considered a point of beauty.

It may not give rise to any disturbance beyond being unsightly. But, on the contrary, it may form a receptacle for dust, seeds, and other foreign bodies which set up irritation and cause a flow of tears, redness and thickening of the conjunctiva, and ultimately a yellowish muco-purulent catarrhal discharge, and perhaps an opacity of the cornea.

When arising from operative interference or an injury, division of the skin above the contraction in the upper eyelid and drawing and keeping down the eyelid until the wound has healed may be all that is required. If this should not be successful it may be deemed necessary to perform an auto-plastic operation. Some cases, and especially those of the lower lid, are remedied by excision of a portion of the conjunctiva and suturing the edges of the resulting wound.

In those breeds in which it is a required point of beauty there is no demand for operative interference. The same remarks apply when it is due to spasm of the orbicularis.

The Membrana Nictitans.

The membrana nictitans, haw or third eyelid, may be the seat of a wound, tumour, or granulations. It may also be so deformed that its superior border is curved over its anterior face.

A wound on the membrana nictitans is usually due in the dog to a cat scratch, or in the horse to a poke with a stick. It is not of much importance unless the deeper structures of the eye are involved. When there is a thin narrow strip of tissue hanging from the main body of the organ, it is best to snip the free portion off with a pair of sharp scissors.

When the front of the eyeball is irritated or touched the membrana protrudes over the front of the eye, and as soon as the irritation is removed it passively regains its normal position. But in some pathological conditions the membrana persistently overlaps the eyeball. It is symptomatic of rabies, meningitis, keratitis, acute conjunctivitis, the earlier stage of periodic ophthalmia, tetanus, wounds, injuries, foreign bodies—especially an oatflight adhering to the cornea—and, in the cat, of the debility of distemper or diphtheria.

Let me repeat that in the cat, as in the dog, it may occasionally persistently protrude over the front of the eyeball and remain in this situation for some time, when the animal is suffering from anæmia, debility, etc.

It is not a foreign body, and when not the seat of actual structural disease it will regain its normal position without any treatment whatever. It should not be removed, as taught by many authorities during the last fifty years. A simple astringent lotion and a few tonic pills are more pleasing to the owner than a mutilative operation, which is absolutely unnecessary.

Displacement of the Harderian Gland.

A small reddish globular tumour, overlapping the front of the membrana nictitans, is commonly seen in spaniels and occasionally in other breeds. On examination it will be found to have its origin at the posterior surface of the membrana, to which it is attached by a sessile or pedunculer base. It varies in size from a pea to a small marble. It is composed principally of adenoid tissue, and is nothing more than a dislocation of the Harderian gland, which is very large in the dog, especially sporting and toy spaniels and the bulldog. It may occur in one or both eyes.

To this anomaly some writers on canine surgery have applied the term "mis-placed orbital gland," but this is erroneous, as the orbital gland is a totally different structure, having a different function, and situated in another part of the orbital cavity.

If it cannot be retained after it has been replaced in its normal *habitat* it is best removed by a pair of fixation forceps and a sharp pair of scissors, after it has been rendered insensible and bloodless by the means of a cocaine and adrenaline instillation.

In the case where the free or superior border of the membrana curves over anteriorly, the overlapping portion may be snipped off with a pair of sharp scissors. I have only observed this condition in the dog.

The Lachrymal Apparatus.

The lachrymal gland is sometimes the seat of disease, especially in the horse, as the result of strangles. Suppuration occurs, but disappears as soon as the animal regains his usual condition. It may give rise to fistulæ, which should be treated on general surgical principles.

Other abnormal conditions of the lachrymal gland may be due to tuberculosis, neoplasmata, including carcinomata, sarcomata, adenomata, lymphenomata, and to a cystoid dilatation of the ducts of the gland. It may also be the seat of atrophy. When it is affected with such abnormalities it may be deemed necessary to extirpate the gland.

The lachrymal sac may be the seat of a chronic catarrh, which gives rise to a profuse flow of tears over the skin of the face causing excoriation and loss of hair. It is usually due to constriction of the nasal duct resulting from inflammation of the nasal mucous membrane or injuries. It may also be caused by ulcers and tumours, such as polypi.

On inspection of the region of the lachrymal sac we find the skin protruding or bulging so much as to make the affected sac appear larger than that of the opposite eye. When pressure is brought to bear upon it the contents are pressed out through the puncture. If of recent origin the discharge is purulent, but watery in cases of long standing.

Treatment consists at first in injections of warm, mild antiseptic solutions into the lachrymal sac by means of a fine probe-pointed syringe, such as Anel's. In the horse it is advisable to inject from the nasal opening of the lachrymal duct. Bowman's sounds or probes should then be passed. In some animals it may be necessary before doing this to slit up the inferior canaliculus to facilitate the introduction of the probes.

Dacryo-cystitis.

This is an acute inflammation of the lachrymal sac which developes suddenly. It is mostly seen in the cat and occasionally in the dog, other animals being rarely affected. The skin over the region appears swollen, reddish or purplish, and shiny, and after a short period this ruptures, leaving a hole which gives exit to a quantity of blood-tinged, yellowish pus, and eventually this is followed by the disappearance of the swelling; but the discharge is changed from a purulent to a mucous and afterwards to a watery one. If this perforation remains nothing but tears, which are forced out of the lachrymal sac, pass through it, and then this condition is termed lachrymal fistula.

A lachrymal fistula should not be confounded with a dental fistula, occurring commonly in the cat and dog from perforation of the outer bony layer of the antrum of Highmore or superior maxillary sinus, arising from

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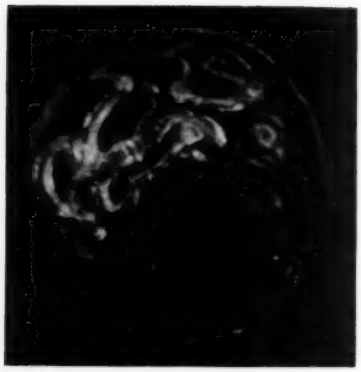
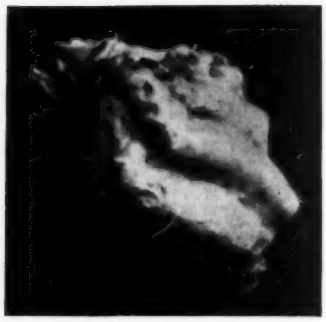
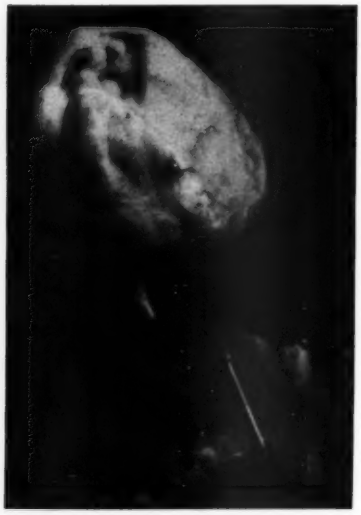
UMI

CARCINOMA OF THE FRONTAL AND PARIETAL BONES.

Note by Mr. E. Wallis Hoare.







From Dentigerous Cyst in abdominal testical of Cryptorchid (Horse).

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DENTIGEROUS CYST IN TEMPORAL REGION (HORSE).

Note by Mr. T. M. Inglis.

UMI

suppuration set up by a carnassial or precarnassial tooth, the seat of suppurative periodontitis.

The seat of these two fistulæ differs. That due to suppuration of the lachrymal sac is a little below and in advance of the inner canthus; whilst that due to a diseased tooth is much inferiorly and posteriorly situated.

The treatment of lachrymal fistula consists of warm fomentations, syringing out the sac, and, should the fistula not disappear, slitting up and treating afterwards like an ordinary open wound.

Epiphora.

This is a term given to that condition in which the tears run down the skin of the face. It may be due to obstruction or complete occlusion of the puncta; deviation of the puncta outward, or slight inward and downward instead of upward curvation. When it is merely a simple or slight eversion it may be removed by slitting the inferior canaliculus. If due to ectropium or entropium the deviation should be remedied so as to bring the puncture into its proper relation with the rest of the eye. But the commonest cause of this condition is that the tears flow so rapidly, as in such affections as conjunctivitis, specific or traumatic, that the puncta and canaliculi cannot carry them away fast enough.

It is a common affection in the chow, and in those dogs which have a wide frontal region, a short narrow muzzle and a steep stop (junction of the facial with the frontal region).

Ophthalmia Neonatorum.

This acute suppurative conjunctivitis of the newborn is a very common disease of the kitten. It is also frequently seen in the puppy. It may manifest itself before or soon after the eyelids are separated. It is specific, and so far as these two animals are concerned I am of opinion it is always due to distemper. I have very often encountered cats that never have borne young without the kittens suffering from this complaint within a week or ten days of birth.

On examination of the mother I have found that she has been suffering from slight catarrhal symptoms, or perhaps has been sneezing. It is quite an enzootic in certain places. If it occurs before the eyes are open it nearly always causes destruction of the sight from profound lesions of the eye. If one is requested to treat these small patients when so affected the eyelids should, after warm fomentations, be forced apart, and the conjunctival sac frequently irrigated with 1-4000 solution of hydrarg. biniodid, vel bichlorid 1-1000; chinosol or potassium permanganate; or 1-400 to 1-100 argent. nit.

The lids should be drawn apart so as to form a pocket or bag, in which the antiseptic liquid should be poured and allowed to flow all over the surface of the conjunctival sac. The owner should be urged to repeat this every hour or two. A similar condition has been seen in other animals, and in particular the lamb.

Acute Conjunctivitis.

This commonly occurs in all our domesticated animals especially from injuries or foreign bodies. When arising from the latter these should be removed, but before doing so the eye should be anæsthetised by means of cocaine in solution instilled into the conjunctival sac, or by inserting a gelatin disc containing cocaine under the eyelid and allowing a few minutes to elapse. After the foreign body has been removed a simple anodyne collyrium may be all that is required as after treatment.

In acute traumatic conjunctivitis the anodyne treatment is much safer than the stimulating or irritating one. Cocaine and atropine drops are sufficient.

Specific Forms of Conjunctivitis.

These may occur either as independent diseases or as secondary affections super-added to pre-existing general infections. In the former case we have conjunctivitis occurring in the ox, sheep and goat, due to a specific virus, in all probability an ultravisible one. It is not yet known whether this disease is intercommunicable between the different species mentioned. By direct experiment the disease is communicable, and may appear within twenty-four hours after inserting the virus within the conjunctival sac.

It is an easily cured disease if treated early, before any profound alterations of the eye have taken place, by means of the local application of solutions of potassium permanganate, chinosol, argent. nit. or hydrarg. biniod. vel bichlorid.

The secondary specific forms occur in nearly all the acute infectious diseases to which our animals are liable. Thus in cattle it is seen in cattle plague and malignant catarrh; in the horse, in influenza and strangles; in sheep, in sheep-pox and malaria; in the pig, in swine fever; in the dog, in distemper and malaria; in the cat, in distemper; and in birds, in diphtheria—the so-called croup or contagious catarrh, which is said by Guèrin to be due to a Pasteurella or microbe of the fowl-cholera type.

A third form is parasitic conjunctivitis, due to filariæ in the conjunctival sac.

We also get conjunctivitis as a part and parcel of periodic ophthalmia and some other affections of the eye.

The conjunctivitis arising during the course of acute general infections is not an essential manifestation of them; it is a secondary affection that can only be overcome when the original infection has abated or disappeared. Remembering this, one can understand why it cannot be controlled by active treatment; all we can do is to adopt soothing mild antiseptic treatment and remove the pain by means of cocaine, novocain or alypin.

Chronic Conjunctivitis.

In the cat and dog, and occasionally in the other domesticated animals, we encounter a chronic purulent conjunctivitis associated with a granular condition of the conjunctival lining of the lids, membrana nictitans, especially of its posterior surface, and sclerotic. The granules are about the size of a maw or rape seed, having a round or oval outline, and are of a pinkish hue (Follicular Conjunctivitis). These may disappear after a time, or, if they remain, become greyish or pinkish grey, have a glistening appearance, and seem to be raised above the conjunctival membrane (Granular Ophthalmia or Trachoma).

In human opthalmology these two form—follicular conjunctivitis and granular conjunctivitis—are generally described as two separate diseases. But from a clinical study of a great number of cases in animals I have come to the conclusion that granular ophthalmia is only an advanced or more chronic form of follicular conjunctivitis. Indeed, even in human ophthalmic medicine, some able observers who have made a microscopical study of these two forms find the difference between them to be one of degree in the hypertrophy of the sub-epithelial adenoid tissue, which exists in both.

In man it is said that both are contagious; but I have not observed transmission from one animal to another, although several animals in a kennel may be affected at the same time. I find, however, it usually occurs during or follows distemper in the dog or influenza in the horse.

It is usually a chronic process, but the symptoms of catarrh generally abate and the disease remains quiescent until in some cases, at least, it breaks out again and gives rise to a chronic yellowish purulent discharge (Blenarrhagic Ophthalmia), especially in such dogs as the Griffon Bruxellois, pug, bull-dog, and spaniel, in which it frequently recurs from time to time, for the rest of the animal's life.

There is another form of chronic conjunctivitis—a purulent form without any granules or follicles. It

occurs chiefly in the dog and I believe it, like the two other forms just described, has its starting point at the time of having distemper. It is commonly seen in those animals kept under bad hygienic conditions.

All three of these clinical varieties are liable to extend from the congested conjunctiva and involve the cornea, which frequently becomes the seat of vessels, and ultimately undergoes pigmentary degeneration with consequent loss of sight.

When the disease confines itself to the conjunctiva it may be advisable to evert the eyelids and to paint the conjunctival membrane with a ten per cent. solution of argent. nit., taking care that the whole surface is thoroughly dressed, that none of the solution reaches the cornea, and that before the eyelids are allowed to resume their natural position, the conjunctival sac is washed out with a warm solution of common salt to neutralise the free nitrate of silver and to wash away the deposits. For the same purpose as the silver salt, a crystal of sulphate of copper may be rubbed on the conjunctival membrane.

If this method is not successful, and should there be any vascularity of the cornea, a collyrium, composed of 1 part of Biniodide of mercury and 10 parts of Iodide of potassium in 5000 of distilled water, to which atropine should be added, should be instilled into the conjunctival sac three times a day.

Granular Condition of the Posterior Surface of the Membrana Nictitans.

I have examined the posterior surface of the membrana nictitans in several hundreds of dogs and cats, and found it heightened in colour and covered with a group of fine granules. This condition is very rarely or never absent, even in very young animals. Is it a normal condition?

Dermoid Pteryguim.

An anomaly by no means rare in all our domesticated animals, from the horse down to the cat, is a dermoid growth situated upon the cornea. It may also extend to other structures, such as the sclerotic or membrana nictitans. These growths are usually single, but occasionally there may be more than one. They mostly appear on the outer part of the cornea, but other segments are not exempt. They are generally in one continuous patch, but sometimes divided in the form of a cleft. When microscopically examined they have the structure of skin, and contain in some parts pigment, sebaceous and sudoriferous glands, and long hairs. They are, by some authorities, considered to be a reversion to type. It seems needless to mention they are congenital; they may increase in size as the animal grows. In the dog, I have seen them principally in the hound class.

In the foal, calf, and sheep they can easily be stripped off after being cut into, previously anæsthetising the eye by means of cocaine or its substitutes, as novocain or alypin, and adrenaline. In the cat and dog, it is advisable to perform the operation whilst the animal is under the influence of a general anæsthetic. The after-treatment consists in the application of mild anodyne collyria. These cases usually do well without leaving much palpable blemish.

Diseases of the Cornea.

The diseases of the cornea may be divided into suppurative and non-suppurative.

The suppurative are well exemplified in the form of ulcers so commonly seen in the cat and dog, and more rarely in other animals and occasionally in poultry and cage birds. They may arise from injuries, but usually are secondary to other complaints, such as distemper, variola, conjunctivitis, malnutrition, and to certain diseases of the brain or cranial nerves. They may be quite superficial, attacking one or two layers of the corneal membrane, or become so deep as to cause perforation of the cornea and to allow an escape of the aqueous humour and the pupillary margin of the iris to project through the corneal wound, and form a pea or grape-like prominence, termed staphyloma. In some cases the ulcer itself does not perforate the cornea, but stops short at Descemet's membrane, which, losing its support, bulges into the breach and projects so as to form a staphyloma. The iris may also be included in this variety. One or both eyes may be the seat of the ulceration, which is usually found in the centre, or a little above the centre of the cornea. Occasionally two or more ulcers will be found side by side or above one another. When they are deep they are usually filled up by cicatricial tissue, and in consequence a permanent white opacity remains.

In some breeds of dogs, such as pugs, griffons, toy spaniels, Pekingese, Japanese this opacity may become blackened as time goes on with a black or brownish pigment. In this case the opacity is not very noticeable unless looked for. The staphylomatous projections, although always leaving a blemish may, in many instances, not appear very unsightly after all active inflammation has ceased and the anterior chamber become filled again with aqueous humour.

In the more superficial ulcers we may have little or no blemishing of the eye remaining, especially if we refrain from using caustics, such as nitrate of silver or chloride of zinc, which destroy living tissue with which they come in contact.

If these ulcers, which sometimes seem as if punched out with a punch, the centre being higher than the circumference, appear sluggish, without, or with very little inflammatory reaction and having no tendency to heal, one might try dusting iodoform, zinc oxide, or boracic acid on them, or, what is better, a daily inunction of them with a mild mercurial ointment, such as the ungt. hydrarg. flav. mitior.

I have seen a form of corneal ulceration in the dog which has looked as if the corneal surface had had small holes or pits dug into it by means of the point of a knife. The ulcers, although not very deep, appeared at first to have had no vascularity or opacity. Attention is generally drawn to them by the owner consulting you about the pain in the dog's eye. There is a slight closure of the lids and perhaps a profuse lachrymation. On looking direct at the eye from a certain distance you notice nothing amiss with it. But on inspecting the cornea laterally you at once see the pits or abrasions—the cause of the trouble. I have encountered this principally in the month of March, especially in windy weather. Cases have been so common as to almost make it appear as if the complaint were an epizötic.

In the treatment of corneal ulceration no caustics should be used. Lotions composed of nitrate of silver or liquor plumbi subacetat. should be avoided, as they are liable to leave deposits upon the ulcers, and, in consequence, a permanent blemish results even in an otherwise curable case. Why adopt heroic treatment when milder measures will attain the object in view?

If there be much pain, cocaine, acoine or alypin and atropine drops should be instilled two or three times a day, and the eye kept clean by the use of a weak antiseptic solution, such as 1-2000 chinosol or 1-4000 biniodide or bichloride of mercury.

Eserine may be used in increased intra-ocular pressure. Puncturing of the cornea, either through the base of the ulcer or in any other part of this membrane may be adopted if the ulcer threatens to extend through all the layers.

In the use of atropine or belladonna one should not forget that it frequently adds to the irritation of the conjunctiva and cornea, and when this is noticed the drug should be discontined.

Conical Cornea or Keratoconus.

This is a condition in which the cornea becomes elongated in the form of a perfectly clear cone without any opacity or turbidity. It may attack one or both eyes, and is especially enconntered in Griffons, Toy Spaniels and the Pekingese.

The apex of the cone should be painted with a five per cent. solution of argent. nit., which at first produces a milkiness. But when the solution is discontinued the artificially produced opacity, together with the conical condition of the cornea, disappears.

A conical condition of the cornea also sometimes appears during the latter stages of vascular keratitis. It generally attacks both eyes, and may be seen in any breed of dog affected with vascular keratitis, which frequently remains after the disappearance of the conical condition. In this case irritants should be avoided. Eserine, adrenaline, or cocaine drops should be prescribed.

Opacities of the Cornea.

Very slight opacities that are often only observed when the eye is examined obliquely are termed nebulæ. They are common in the horse and dog. When the opacity is dense and can be easily recognised it takes the term macula. If the opacity is very dense and non-translucent, as is usually the case when it results from a deep or perforative corneal ulcer, it takes the name of leucoma or albugo. Sometimes, and especially in the dog, this last-named opacity has a filament or band of the iris adhering to it at the posterior surface of the cornea.

These opacities may be discoid, stellate, linear or zigzag in outline. But I have often observed a milky or bluish-white condition of the whole of the cornea in one or both eyes. It is unaccompanied by pain, inflammatory reaction, or discharge. It occurs during the course of distemper or from some unknown cause. It generally disappears without any treatment, or after the use of a simple mild astringent lotion. If it should be obstinate, good nutritious food, cod-liver oil, or Virol should be given. I have, however, seen one eye clear up and the other remain opaque the duration of the animal's life.

Melanistic Condition of the Cornea.

The brown or black pigmentary spots or diffuse deposits within the layers of the cornea, usually resulting from a pigmentary vascular keratitis or degeneration, do not disappear with or without treatment. An opacity resulting from a deep ulcer may undergo this pigmentary degeneration or, perhaps, infiltration. It is very common in the dog.

Posterior Keratitis.

An opacity of the inferior two-thirds of the posterior surface (Descemet's membrane) of the cornea is observed to be due to a floating lens, which causes friction, and in consequence inflammation of Descemet's membrane. It may occur in one or both eyes.

After a more or less lengthy period a secondary glaucomatous condition is set up, to be followed by chronic panophthalmitis, and ultimately hydrophthalmos. I shall refer to its treatment when I discourse upon luxation of the lens.

Vascular Keratitis.—Pannus.

A superficial and vascular condition of the cornea, caused by friction of granular lids, entropium trichiasis and over-lapping warts on the eyelids, and termed pannus, is sometimes seen in the cat and dog, and rarely in other animals. But all the just mentioned causes may be in play without any alteration of the cornea being noticed.

The commonest form of vascular keratitis (excluding the vascular condition of the corneal membrane arising from injuries, abrasion, ulceration, or simple conjunctivitis, which tends to disappear as soon as the cause abates) usually occurs in both eyes, and often has a tendency to cover the whole of the cornea. It is a progressive disease, and one may be certain if irritants are used in the treatment of it that it will spread rapidly, instead as it usually does creepingly.

It may be seen in comparatively young dogs, but as a rule it is oftener observed as age progresses. It may be associated with chronic eczema of the eyelid, ear or other parts, but this is quite co-incidental, for in nine out of ten cases it appears in dogs that have not, nor ever have had, eczema. It may also be associated with a chronic purulent conjunctivitis, with or without granules, upon the surface of the sclerotic conjunctiva.

Although it is usually seen in pet dogs having prominent eyes, such as the pug, griffon, toy spaniels, Japanese and Pekingese, I have observed it in Aberdeen, Irish and fox-terriers, field spaniels, and the bulldog.

The vascular condition may be confined to the superficial layers of the cornea, when we get distension or injection of the ciliary and conjunctival vessels, which extend and spread in a fan-like manner and stand out upon the cornea. They may only attack one segment, but they may also encircle the whole of the corneal circumference and gradually progress towards the centre.

At times the process may be arrested, and even retrogress, to start afresh at some future time, until it leaves an indelible blackish or brownish wedge-shape blemish, resembling on close inspection the wing of a fly. During their inactivity the fine network of vessels have a brownish or greyish appearance. There is rarely any opacity. When the disease remains stationary one may see some large vessels, which give off finer and shorter branches, standing out prominently. Conical cornea may develop in some cases during the latter stages.

Interstitial or Profound Keratitis.

When the vascular condition affects the deeper layers of the cornea, we notice the vessels are very fine, almost imperceptible, shorter, and spread out in a fan-like manner, all round or only in a segment of the cornea. To this state the term interstitial, parenchymatous or profound keratitis is given. In man it is generally associated with syphilis, but in animals, in which it is not rare, no such cause can be ascribed. It may occur during the course of, or as a result of distemper, or of trypanosomiasis.

It differs anatomically from superficial vascular keratitis inasmuch as the blood supply of the affected cornea is derived from the deep or sclerotic vessels, whereas in the latter it is supplied from the conjunctival and ciliary vessels.

These two forms are, I can positively affirm, the most difficult of the eye diseases in animals to treat. He who fancies he has an easy task in front of him will be mistaken. If irritants are used the case will be rendered almost, if not quite, hopeless.

Our aim should be to remove the irritation and at the same time to assist the vessels to constrict. For this purpose adrenaline chloride 1-1000, and novocain or cocaine 2-4 per cent. should be instilled into the conjunctival sac three or four times a day. If there should be any tendency to iritis, a few drops of a solution of atropine sulphate (1-200) will be beneficial.

The polyvalent anti-streptococcic serum instilled into the conjunctival sac has appeared to me to have given an abatement of the symptoms in those cases with which I have tried this agent.

I have also arrested the disease by the instillation of a solution of biniodide of mercury (1-10,000) and potassium iodide (1-1000) in conjunction with the application of cocaine and atropine. Iodide of potassium, iron and arsenic should be given internally.

The animal should be kept out of the glare of sunlight or firelight and away from wind or dust, and if

possible have its eyes shaded by means of a hood or cap.

I have several times tried the operation of peritomy, so highly recommended by some human ophthalmologists in the treatment of this disease in man, but have never had any success. I think it made my cases worse. I have also divided the conjunctival and ciliary vessels by passing through them the sharp electric cautery.

Parasitic Keratitis.

This form of keratitis occurs chiefly in the horse and ox, but it may also be seen on very rare occasions in the sheep, dog, fowl, and goose.

In the horse it is usually due to the filaria papillosa, and is often associated with a peculiar weakness of the loins termed by the Hindoos, kumree, which is in all probability allied to the South American Mal de Cadera which, so far as I have had the symptoms described to me by mining engineers, probably also occurs in some parts of West Africa.

Diseases of the Uveal Tract.

The uveal tract, comprising the Iris, Ciliary body and Choroid, is, in the horse, more liable to be attacked by disease than any other structure of the eye. In other animals it is affected to a less extent. It is the principal seat of periodic ophthalmia.

In the herbivora the iris is fringed with black, sooty, more or less globular-looking bodies termed the corpora nigra, which are considered to be ectopiæ of the uvea. In some animals of this class the corpora nigra are almost as well marked in the lower as in the upper margin of the inner or free circumference of the iris. In the horse they are well marked in the upper margin, and as a rule very minute or scarcely noticeable in the lower. But there are many exceptions to this. In ponies subsisting principally upon the food they obtain in the open on mountain or moor, the lower corpora nigra are often very well developed, almost if not quite as large as those seen in the upper pupillary margin.

Enlarged Corpora Nigra.

These bodies are not infrequently very large, from the size of a pea to a small marble, and much speculation has been entered upon as to the safety of a horse bearing such large bodies. Some assert that they cause shying; others consider them of no importance, and with this my experience agrees. In support of the former view some observers have surgically removed the enlarged body with the result that no shying has occurred afterwards.

Torn or Detached Corpora Nigra.

The corpora nigra may become detached from the free border of the iris and float about the anterior chamber, apparently causing no interference with the sight or, at least, the safety of the animal. They may also be seen torn, hanging down over the front of the pupillary opening by means of a long narrow pedicle attached to the free border of the iris.

In one horse in which I encountered a case of this sort there was shying and only on the side affected.

Iritis.

The iris may be the seat of inflammation arising from certain specific blood diseases, such as influenza, strangles, glanders, distemper, malignant catarrh, contagious pneumonia, tuberculosis, trypanosomiasis, etc. It may also extend from inflammation affecting other parts of the eye, or from an injury, or follow an operation for cataract.

Irido-cyclitis.

The iris alone is rarely affected; it is generally associated with the ciliary body, when it receives the term Irido-cyclitis. This, in the horse, may be a primary disease, as in the case of periodic ophthalmia.

Periodic, Recurrent or Specific Ophthalmia (Moon-blindness, Lunatic Eyes).

This is considered to be a special disease of the horse's eye, arising from a microbial infection derived from another horse so affected. According to Dr. Dor, who has made a special study of this disease in French cavalry horses, it is due to a diplococcus resembling the gonococcus which is only found in the interior of the cells, and which is, in its higher developmental form, clearly bacillary. With this micro-organism Dor has been able to induce irido-cyclitis repeatedly.

Judging from the abundance of ancient literature upon this complaint, it was formerly a very much commoner disease in this country than it is to-day. Gibson, in his *New Treatise on the Diseases of Horses* that appeared in 1751, devotes many pages to it as well as to other eye diseases. Coleman, I believe, also gave it a great deal of attention. But comparing the writings of Percival, Blaine, Youatt, and Williams (who seemed to have borrowed largely from one another, when they did not do so from Gibson and the older French or Italian authors) with those of Gibson, we have not learned much from them that was not to be learned from Gibson.

It is said to be a more prevalent disease in Ireland than in England. It was very prevalent in South Africa during the late war. Indigenous mules were apparently rarely affected. Although it would appear to be more prevalent on the Continent of Europe than it is with us, it does not occur to such an extent as it did formerly.

Various hypotheses have been advanced as to its etiology, but I think we may safely conclude, from its general history and clinical characters, that it is due to a specific micro-organism, as specific to it as the bacillus of tuberculosis to tuberculosis.

Bad hygienic conditions, such as dark ill-ventilated, badly drained stabling, and over-powering emanations arising from accumulated fæcal matter and urine in the stable, has been invoked as a cause. Heredity has also been accused as a factor; but this, as in the case of tuberculosis, is no longer tenable. It may, however, be congenital.

It has often been observed, as soon as a case of periodic ophthalmia has been introduced into a cavalry regiment or large stud of horses, a great number of the other horses have during the course of a few years become affected. Even some stables have been accused of being the propagators of the disease, which has not disappeared until the stable has been thoroughly cleansed, disinfected, and lime-washed. It is said to be enzootic in some districts.

The disease does not run a continuous course, but is interrupted by periods of rest and recurrence. In the initial stage it may give rise to constitutional disturbance, such as an elevation of the internal temperature, and dulness. The animal hangs his head, the appetite is dimished and his movements are sluggish. The pulse is hard and quick. Tears commence to flow from the eye, lids of which gradually become swollen, so much so as to hide the eyeball by the reddish œdematous conjunctiva. The tears are so scalding that they cause, after a little time, excoriation of the cuticle with loss of hair. Vessels appear round the cornea, and may extend towards its centre; the cornea is smoky, whitish or yellowish, and the anterior chamber contains a straw-coloured deposit which is sometimes mixed with blood (hypopyon). The iris is, if it can be seen, of a dirty-greyish or yellowish colour and has a dull, sluggish appearance. After a varying period the eye gradually commences to clear up so that the deeper parts may be seen.

In milder cases the eye is shut and slightly moist; the cornea becomes dull; and the anterior chamber contains some flocculi which sometimes rapidly disappear. More chronic forms may appear as a simple conjunctivitis

with a slight smokiness of the cornea. In practice one may attend such a case and put it down to a simple injury which recovers after a mild treatment. Many of these end in cataract, without much attention from the attendant until the cataract has appeared.

Periodic opthalmia recurs from time to time until cataract has appeared, and the eye is irretrievably lost so far as vision is concerned. Very often the eye commences to atrophy and this continues until it is absorbed.

A primary attack may be separated from a second attack by a quiet interval varying from a week to a year; but on an average it will be found to be about one or two months. Sometimes the affection attacks only one eye, but as a rule it attacks first one and then the other until both eyes have become sightless. Occasionally the first eye affected recovers permanently, only for the other to become attacked and ultimately destroyed. Before the disease has run its course it may have periods of recurrence and quiescence from four to seven times.

Although the iris and ciliary body are the primary seat of periodic ophthalmia, eventually no part of the eyeball is left untouched. The disease usually ends with total cataract, white atrophy of the optic nerve and choroiditis, when total absorption does not take place.

Treatment consists in isolating the affected animals and disinfecting the habitations vacated by them. Applications of mild mercurial ointment (Ungt. Hydrarg. Mitior), containing belladonna should be well rubbed around the orbit and into the conjunctival sac; aperients and large doses of iodide of potassium should be given; and the animal kept in a darkened stable or shed. In lieu of this, the eyes should be protected from light by means of a hood.

Dr. Dor, appointed by the French Government to enquire into the causation of treatment of periodic ophthalmia, after experimenting with various medicaments, came to the conclusion that six to eight drachms of iodide of potassium daily, with the local application of this salt, gave excellent results. This has been confirmed by several eminent French, German and Russian veterinary surgeons. On the contrary, there are as many equally eminent, of the same nationalities, who do not speak so highly of this treatment. Some practitioners inject the iodide under the conjunctiva covering the eyeball. Professor Brusasco, of Turin, advises the following treatment:—

Four drachms of potassium iodide with sodium bicarbonate, twice daily in the drinking water; a few drops of the following to be instilled in the eyes twice a day:

Pot. iodid.	2·5
Cocain. hydrochlorid.	1
Glycerin	8
Aq. destillat	50

A 3 per cent. solution of pot. iodid. should be applied by means of a saturated compress to the eyes. As soon as the intolerance to light and the hyperæsthesia disappear cocaine is omitted; but the iodide is to be continued. If the eyes have been affected for some time and synechiæ have formed, a few drops of a 1 per cent. solution of atropine should be instilled every three or four hours until the symptoms have disappeared. This treatment requires to be continued for four or five weeks, and it is said that by its means the disease may be arrested, and even a recovery brought about.

The local application of biniodide of mercury and the internal administration of sodium salicylate have been tried.

The local instillation and also subcutaneous injection of the polyvalent (equine) antistreptococcic serum deserve a trial.

Secondary Irido-Cyclitis.

There is another form of irido-cyclitis seen in the horse, and having very much the same symptomatology as that of periodic ophthalmia. It usually arises from strangles, pneumonia or influenza. It differs from periodic ophthalmia by its having no tendency to spread in a stud of horses.

The same treatment advised for periodic ophthalmia may be adopted.

Irido-cyclitis occasionally occurs in the cat, dog, and ox. It is generally a secondary affection in these animals.

Iridodealysis.

This consists of a separation of the iris from its attachment to the ciliary body. The rent may vary in size. The condition is often seen in the horse, cat and dog, and is due to blows, lacerations of the cornea caused by a cat scratch, running against sharp projections, etc. If the iris is prolapsed in cases of laceration of the cornea, the projecting portion should be cut off and the stump pushed back into the anterior chamber. In some of these cases I have sutured the cornea and have had good results without much blemish remaining.

Chorea of the Iris.

In some cases of slight cerebral chorea following distemper I have observed the irides move clonically. This should not be confounded with iridodonesis, or the trembling action of the iris when the eye moves, which is due to the loss of support of the iris in consequence of dislocation of the lens.

Coloboma of the Iris.

A cleft in the iris due to an incomplete closure of the choroidal fissure is occasionally seen in the horse and dog. In this latter, when the pupil is dilated, the cleft or fissure is scarcely noticeable; but when contracted the small orifice is noticed near the free pupillary margin. When it gives rise to more than one distinct pupil, as is sometimes seen in the horse, it is denominated polycoria.

Heterophthalmos.

This is a term given to odd eyes, where the irides differ in colour one from the other.

Persistent Pupillary Membrane.

This congenital condition has often been seen in the foal, puppy, cat and other animals. The membrane appears as very fine, whitish or yellowish filaments stretched across or hanging in front of the pupil. This condition should not be confounded with synechiæ. It does not seem to affect the vision; and very often it disappears as the development of the young animal progresses.

Choroiditis.

The choroid coat of the eye is often affected with inflammation. Sometimes it is associated with irido-cyclitis. It may be disseminated in patches, or diffuse. This latter form is of serious consequence to the horse. The disseminated form does not in the majority of cases appear to cause much disturbance of sight. It sometimes occurs in other animals.

Retina and Optic Nerve.

The retina and papilla are frequently the seat of inflammation, degeneration, or atrophy. The retina may also be the seat of hæmorrhage, or become detached from the choroid coat.

Inflammation and the consequent degeneration of the optic nerve may progress in two ways: (1) it may attack the papilla first; or (2) descend from the cerebral extremity. To this latter the term retro-bulbar neuritis is given. Ophthalmoscopic examination may not give any evidence of its existence until a variable period has elapsed from its commencement. These conditions may at first cause dimness of sight or abolition of this function, when they give rise to the amaurotic state of the pupil.

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Amaurosis or Pathological Mydriasis.

Before the foundation of the veterinary schools, practitioners of the veterinary art gave the name gutta serena and also "glass eye" to that pathological condition of the eye where the animal was totally blind and had a widely dilated pupil without any other appreciable changes being observed. Since the introduction of the ophthalmosope the term amaurosis, which replaced the former designation, is gradually falling into disuse, because many of the different morbid conditions from which it arises are now discoverable.

In human ophthalmology the term amblyopia is applied to those cases of defective sight that cannot be relieved by suitable spectacles. No doubt this latter condition exists in our animals, but we have not the subjective symptoms to assist us in its determination. But although the term amaurosis, which is not in itself a disease but merely an effect of many morbid conditions of the eye, brain, or spinal cord, has not the significance it formerly had, it is still retained to designate that dilated state of the pupil accompanied by blindness, where the ophthalmoscope does not enable us to discover any pathological process to account for it.

The amaurotic condition of the pupil has followed on loss of blood after castration and other operations or injuries, suppression of lactation or diarrhœa, suppression of the "heat" or menstruation in the bitch, hysteria in the bitch, and large doses of such drugs as quinine. It has often been seen in the mare during pregnancy. It is said to be due to worms and dentition. It is symptomatic of a great number of brain diseases, such as neoplasmata, parasitic cysts, acute and chronic hydrocephalus, cerebral meningitis, apoplexy, and injuries of the brain. It is also seen in some diseases and injuries of the spinal cord. In man it is symptomatic of locomotor ataxy.

It originates also from retinitis, optic neuritis, and retro-bulbar neuritis (Stauungspapille or choked disc), diffuse choroiditis, periodic ophthalmia, certain poisons such as lead, poisonous plants, food contaminated with certain fungi, strangles, influenza, tuberculosis, canine distemper, parturient apoplexy, gastric and intestinal disorders, and in the cat from chronic secondary glaucoma, due to dislocation of the lens.

In the horse an amblyotic state of the sight has been observed in Australia from ingestion of the native tobacco plant. On post-mortem examination of such cases the pathological change found was a retro-bulbar neuritis.

Usually both eyes are affected. Occasionally only one is the seat of this disorder. The pupil does not as a rule contract to light. Exceptionally it moves sluggishly to this stimulus. In hysteria in the bitch I have often observed one pupil myotic and the other mydriatic.

The amaurotic horse usually carries his head high with nose somewhat poked out, and the ears erect and on the alert. The facial expression is a meaningless one. During progression he lifts his limbs high. When walking where obstacles are he goes as if seeing with his nose and feeling with his feet.

The treatment of the amaurotic condition of the eyes is subservient to the cause. If due to acute retinitis, optic neuritis, embolism of the central artery, cerebral hæmorrhage, thrombosis of the venous sinuses, or infection of the optic tract or centres, aperients, followed by large doses of potassium iodide, should be given. In the very early stage leeches to the conjunctiva, a seton at the nape of neck, or a blister over the cranium might be adopted.

In the case of stomach or bowel trouble a dose of physic, or an injection of arecoline, eserine, or pilocarpine will generally remove the temporary amaurosis. In those cases in the bitch due to suppression of the "heat" emmenagogues should be tried.

In those cases where no morbid process is discernible on ophthalmoscopic examination, large doses of potassium iodide, followed later on by the local application of strychnine, should be given.

When resulting from hæmorrhage the subcutaneous injection of normal saline solution and digitalis should have a trial. When occurring during pregnancy, no violent treatment should be adopted until after parturition, for then the eyesight is often restored without any treatment. When arising from infectious diseases, polyvalent antistreptococcic serum, sodium salicylate, and sodium chloride might be tried before recourse is had to large doses of potassium iodide, arsenic and strychnine. The application of strychnine to a raw surface induced by a blister over the cranial region was highly recommended by many old authorities.

When amaurosis arises from chronic changes of the retina, optic nerve, and brain, or from cerebral tumours, no hope need be entertained, unless in the case of cerebral tumours the removal of which may be attempted.

Vitreous Humour.

The vitreous humour is sometimes the seat of disease. I have often encountered liquefaction of this humour (synchisis), the liquid containing whitish granules, resembling grains of meal or white sand, rolling about in the bottom of the hyaloid membrane when the animal moved its head or rolled its eyes. It is common in the pug dog. I have been able to see this by the naked eye. It is usually associated with a dilated pupil. Both eyes may be affected. Sight may not be abolished. In one case I observed an anterior synechia, a long filament of the iris becoming attached to the posterior surface of the cornea, immediately behind an old cicatricial lesion, in all probability the remains of a deep or perforative corneal ulcer.

Persistence of the Hyaloid Artery and the Hyaloid Canal.

During fœtal life a canal, the hyaloid or Cloquet's canal, through which the hyaloid artery passes, extends from the optic papilla to the posterior surface of the lens. At birth or soon after the artery usually disappears; but the canal remains in the adult although it cannot be seen. But in some cases this fœtal artery remains during adult life. It has been observed in the horse, dog, cat, ox, pig, and rabbit, and does not seem to affect their sight. It is often associated with posterior polar cataract or lenticonus.

Cataract.

Cataract, or opacity of the lens, occurs in all our domestic animals, canaries and other caged or aviary birds, and in wild animals kept in Zoological Gardens. Of the domestic animals the dog, horse, and cat are more often affected than the other species.

Cataract may occur as a primary disease, especially in the dog and bird. As a rule, however, it is generally secondary to some other condition, such as wounds, iritis, periodic ophthalmia, and probably mellituria. It may also be congenital as in the foal and dog, or arise as a senile process. It has followed from the ingestion of napthalin. There is also an hereditary tendency towards it.

A cataract may be situated either upon the anterior or posterior capsule of the lens; it may also be in the centre in the cortical portion, or affect the whole substance of this organ. When arising from periodic ophthalmia or irido-cyclitis, the cataractous lens has frequently, upon its anterior capsule, blackish or brownish spots or patches, the remains of the iris left from a previous posterior synechia.

The cataractous opacity may be discoid, stellate, zigzag, radiate, in the form of lines running from the centre to the circumference like the spokes of a wheel,

cloudy, or snow-like, etc. Its colour is greyish or white. When viewed with the opthalmoscope or Davidson's Direct Ophthalmoscopic Illuminator, the partial cataract has a blackish appearance, and the optic papilla and tapetum cannot be seen through the opaque part of the lens, which, in the normal state, is as absolutely transparent as colourless glass. The linear or zig-zag cataract, when examined by the ophthalmoscope, give the appearance of broken mercury at the back of a glass mirror.

Cataract may occur at any time of life, but is chiefly seen in old age. In the dog, every one of a litter may be born with it or acquire it. In this species I doubt very much if there is a so-called "diabetic" cataract. It is true that cataract may occur in diabetes, but the majority of cases of diabetes appear without any cataract. Diabetes generally attacks aged dogs, the period of life when they are most liable to develop cataract. Therefore, in my opinion, the so-called diabetic cataract, like the diabetic wart, is merely coincidental with diabetes.

Cataracts vary much in their development. Some, like the stellate nuclear cataract in the dog, and the nebular anterior capsular cataract in the horse, remain in a quiescent state the whole of the animal's natural existence. On the other hand, an irregular shaped cataract having a hazy appearance should be treated with suspicion, as it may be the result of a previous attack of periodic ophthalmia. The congenital cataract in the foal and puppy are said to sometimes, clear up and disappear.

The chief interest to us is to know how long a cataract has been in existence. Is it likely to interfere with the usefulness or safety of the animal as a riding or light driving horse? Or will it progress so as to become total? Or is it hereditary? Several practical men have observed cases where hunters have seen (?) and even negotiated fences.

Greyish or Dullish Lens.

The greyish or dullish appearance of the lens in old animals, especially old dogs and horses, is not a cataractous condition. When examined by the ophthalmoscope the lens will be found to be transparent, so that the fundus including the tapetum can readily be seen.

Luxation and Sub-luxation of the Lens.

Luxation or sub-luxation of the lens is seen oftener in the horse than either in dog or cat, although it is not rare in the two latter animals. It may either be congenital or arise from injuries, such as blows or punctured wounds, or certain diseases of the eye. The immediate causes of luxation or sub-luxation are respectively the complete or partial rupture of the zonula of Zinn. When the condition is congenital it is due to arrested development of the zonula.

It may occur in one or both eyes. The partially dislocated lens may be pushed up or down in any direction of the vitreous humour. As a rule, however, the direction it takes is an inferior or infero-lateral one, where its upper border is seen through the dilated pupillary openings, and resembles a greyish or whitish body, and sometimes a large hailstone. When the luxation is complete the lens may be found in the anterior chamber, vitreous humour and even under the conjunctiva. When the lens floats to and fro in the anterior chamber it sets up irritation, causing at first posterior keratitis and opacity of the inferior two-thirds of the cornea, and ultimately secondary glaucoma, panophthalmia and even hydrophthalmos. If the dislocation takes place into the vitreous humour it seldom gives rise to irritation. When the lens is found in the inferior part of the anterior chamber, its appearance resembles a large hailstone. The iris, when it has lost its posterior support through the lens becoming dislocated, trembles when the eye moves (irido-donesis) and appears like a curtain hanging loosely at an open window.

The completely luxated lens when in the anterior chamber should be removed, or at least its capsule torn with a discission or cataract needle, so as to allow the action of the aqueous humour to bring about its dissolution and absorption. If left alone it is ultimately bound to destroy the sight and give the eye an unsightly appearance. If the luxation is into the vitreous humour or if it is an incomplete one, and causes little if any disturbance, it may be advisable to leave it alone. I have noticed in several cases that the animal appears to see better at night-time than during the day.

Lenticonus or Conical Lens.

This is a congenital anomaly. The conical condition may be found on the anterior or posterior surface of the lens. When on the posterior surface it is generally associated with another congenital anomaly, viz., persistent hyaloid artery and Cloquet's canal.

Glaucoma.

Glaucoma, or increase in the intra-ocular tension, is rarely, if ever, a primary affection of the eyes in animals. Perhaps I should say it is recognised in consequence of the absence of subjective symptoms in our patients. It is generally secondary to some other disease or injury to the eye, such as iritis, periodic ophthalmia, luxation or sub-luxation of the lens, blows, punctures, and after the operation of discission or extraction for cataract.

If possible the cause should be removed. The instillation of eserine or pilocarpine should be tried. I have tried puncturing the cornea and making a wide incision so as to allow an escape of aqueous humour, and probably leaving a drain for the fluid to filter off. This gives much better results than merely puncturing the cornea with a needle.

Iodide of potassium, sodium salicylate and aperients should be given.

Panophthalmitis.

Inflammation of the whole eyeball very often arises from an injury, or a local infection of the eye. As a rule it ends in total or partial destruction of the globe, and nearly always the sight is destroyed. The most rapid cases are seen in distemper in the cat and dog.

The treatment consists of warm mild antiseptic fomentations to the eye, and atropine, cocaine, or eserine drops instilled into the conjunctival sac. Sometimes weak antiseptic solutions have been introduced into the anterior chamber. Cocaine and adrenalin might also be injected. Aperients and iodide of potassium should be given internally.

Hydrophthalmos.

This seems to be only an advanced state of secondary glaucoma. It is commonly seen in, the dog, sometimes in the cat, but rarely in the horse and other domesticated animals. It is generally due to an injury or some disease of the eye, especially complete luxation of the lens. The commonest cause in the dog is dislocation of the eyeball and imperfect reduction of the same.

If it is of recent origin it should be treated on similar lines to secondary glaucoma. But when it has become chronic and unsightly the organ should be enucleated.

Atrophy of the Eyeball.

Atrophy or wasting of the eye results from an injury, such as a blow from a stick or stone, or a surgical operation, as cataract extraction, or some acute disease of the eye, such as perforative ulceration of the cornea, hæmorrhage into the anterior chamber or vitreous humour, staphyloma, periodic ophthalmia, or detachment of the retina.

UMI

Microphthalmos.

Microphthalmos is seen in all our domesticated animals. It is an imperfect development of the eyeball, which may be no larger than a hempseed, pea, or small marble. It may be found on only one side or both. I have seen it in every member of a litter of inbred pups. When the eyeball is of larger dimensions than those just mentioned, but not quite up to the normal eye, there may be an upward vertical squint, and perhaps nystagmus.

Exophthalmic Gôitre.

Compared with its frequency in man this disease is rare in our domestic animals. It has been observed in the horse, dog, and ox. It attacks the female more than the male. The eyeballs are prominent, protruding almost outside the eyelids. It is accompanied by increased cardiac action and enlargement of the thyroid glands.

Luxation or Avulsion of the Eyeball.

This is commonly seen in those dogs, such as pugs Pekingese, Japanese, and toy spaniels, that have prominent and mobile eyeballs. It is also seen occasionally in other breeds, and in the cat. It is generally caused by the scratching of a cat or the bite of another dog. It may, however, be due to a blow of a stick.

If the optic nerve and muscles are not strained too much reduction is generally easy; but where these structures are lacerated or strained, and there is extravasation into the sub-conjunctival tissue, it is difficult to retain the eyeball within the eyelids after they have been sutured together for a time. In this case it may be necessary to enucleate the eyeball, which is is better done by a suitable pair of scissors than a knife. When the eyeball is practically torn out of the eye-socket and hanging on the cheek by means of a thin pedicle, it should be cut off by means of a pair of scissors.

Strabismus or Squint.

Strabismus is very often congenital in the cat and dog and is then generally convergent. It may also arise from brain lesions occurring during the course of or following distemper, and is sometimes then associated with vertigo or twisting in a circle, especially when the dog commences to walk. When congenital in the dog or cat, every member of a litter may be affected. In the dog it may also be vertical in the upward direction, and when both eyes are affected, as I have seen it in a litter of fox-terrier pups, the animal runs with his muzzle inclined upwards with the facial and cranial surface almost in a line straight with the neck. This form of vertical strabismus is often associated with an imperfect development of the eye; the cornea, and in fact the whole eyeball being of a smaller diameter than the normal eye.

In the horse, and adult or aged dog, strabismus is often accompanied by deviation of the head, which is elevated and held on one side as if something were in the ear. In inferior strabismus the muzzle is turned to the opposite side to the affected eye. In one case of spasmodic torto-collis in an aged pcodie the left eye was affected with inferior strabismus, the other was normal. The deviation of head was so exaggerated that the inferior surface of the lower jaw was turned to the right and was held in a vertical position.

In the majority of cases of superior strabismus the deviation is on the same side as the affected eye. In double vertical strabismus, one may be superior and the other inferior. Divergent squint is rare in animals. When it is acquired it may either be due to an injury, cerebral hæmorrhage or some other brain disease. It may be symptomatic of rabies, cerebral meningitis, cerebral tumours, etc.

Treatment generally ends in failure, as most cases occurring in animals are due to imperfect development of the eye or nerve centres of the brain governing the eye. When arising from injuries of the brain, iodide of potassium and, after some time, strychnine might be tried. In those cases brought about by injuries of the eye or orbit, division of the contracted muscle or tissue might be attempted.

Nystagmus.

This is a very common symptom seen in dogs, especially small Pomeranians suffering from the after-effects of distemper, fits, hysteria; in aged dogs in spasmodic torto-collis; and in microphthalmos. It is also observed in the horse when suffering from cerebro-spinal meningitis and disseminated sclerosis; in the pig, in brine poisoning; and in the ox in parturient apoplexy. The eyeballs oscillate from side to side, in the vertical direction, or rotate. It should not be confounded with chorea of the iris.

Shying.

This vice should, I think, be treated upon under the "diseases of the eye" as it is very widely considered to be due to defective sight arising from some disease of the eye or error of refraction. I have already mentioned, when dealing with diseases of the uveal tract, that enlargement or laceration of the corpora nigra is ascribed as a source.

There is no doubt that some cases are caused by posterior synechia, flocculi floating about in the anterior chamber, incipient cataract, flocculi, bands or strings floating in the liquefied vitreous humour, disseminated choroiditis, retinitis and commencing optic neuritis. In addition to these, it has been asserted that luxation or subluxation of the lens, or removal of a cataractous lens is a fruitful source of shying of the worst description. The instillation of atropine into the conjunctival sac, and working the horse before the action of the drug has passed off, may give rise to temporary shying.

I have, however, found that the majority of the conditions just mentioned may exist without any shying. In my experience the greatest number of cases of shying is found in skittish, high-couraged, or nervous animals, just as timidity is found in nervous or hysterical people. Shying is very rarely found in hardworked, or in heavier or lymphatic animals. It is generally encountered in the better-bred horse or in the pony, a class not regularly worked, but kept for too great a proportion of time in the stable. It is relatively rarer in horses kept in large towns where traffic is plentiful than in those used in the country.

Myopia, or short-sight, is said to be a common condition of the horse's eye, and to often give rise to shying. This may be so, but the nervous temperament of the animal plays, in my opinion, the most important part in the vice.

The best treatment for this vice, when it does not arise from actual disease of the eye, as for many other vices, both in human beings and in animals, is plenty of hard work. But when this cannot be enforced, as in a carriage horse and in a certain kind of riding horse, covered blinkers is the only alternative. If due to myopia, a suitable pair of biconvex spectacles might be tried. When resulting from actual disease of the eye, this should, if possible, be removed or at least ameliorated. If this is out of the question, covered blinkers should be used.

A Ruminant.

Q. What is a ruminant?
A. An animal that chews its cubs.

"Esperanto," South Moat Road, Mandalay.

THE VETERINARY MUTUAL DEFENCE FUND.

FINANCIAL STATEMENT, 31st December, 1908.

Dr. *Mr. J. B. Wolstenholme, 102, Quay Street, Manchester, Honorary Treasurer, in account with the Fund.* **Cr.**

Dec. 31st. 1907.	£ s. d.	£ s. d.	Feb. 18th, 1908.	£ s. d.	£ s. d.
To Cash at Bankers		1009 16 10	By Amount transferred to the Benevolent Fund in accordance with the Society's Rule No. 12, the Defence Fund having reached the sum of £1000		400 0 0
Dec. 31st, 1908.			Dec. 31st, 1908.		
To Entrance Fees and Subscriptions received for 1908 and Arrears	154 17 6		By Hire of Rooms	1 3 0	
Subscriptions received in advance	2 12 6		Printing, Stationery, and Advertising	11 1 9	
Bank Interest	7 13 5		Law Costs in Defence of Actions brought against Members of the Society	177 11 2	
		165 3 5	Secretary's Postages, etc.	1 1 0	
			Treasurer's Postages	0 12 4	
					191 9 3
			Balance at Bankers		583 11 0
		£1175 0 3			£1175 0 3

We have examined the above written account and certify the same to be correct,

ALFRED H. POWNALL, F.C.A.
HARRY D. CHORLTON.

27th February, 1909.

THE VETERINARY MUTUAL BENEVOLENT FUND.

Dr. *Mr. J. B. Woltstenholme, 102 Quay Street, Manchester, Honorary Treasurer, in account with the Fund.* **Cr.**

Dec. 31st, 1907.	£ s. d.	£ s. d.		£ s. d.	£ s. d.
To Cash at Bankers		308 12 5	Feb. 18th, 1908.		
Feb. 18th, 1908.			By Salford Corporation Dwelling-house Improvement Department:—		
To Amount transferred from Defence Fund in accordance with the Society's Rule No. 12, that Fund having reached the sum of £1000		400 0 0	Loan on Mortgage for 3 years from this date at £3 12s. 6d. per cent. interest per annum		600 0 0
Dec. 31st, 1908.			Dec. 31st, 1908.		
To Mersey Docks & Harbour Board:			By Printing, Stationery, Advertising		2 9 6
One year's interest on Bond for £1300 at 3½ per cent., less tax	43 4 6		Grants:		
One year's interest on Bond for £600 at 3½ per cent., less tax	17 16 2		J. F.	2 0 0	
Manchester Corporation Improvement Department:—			E. F. C.	5 0 0	
One year's interest on Mortgage for £900 at 3½ per cent., less tax	29 18 6		H. T.	4 0 0	
One year's interest on Mortgage for £800 at 3⅝ per cent., less tax	25 13 0		M. S.'s Family ...	5 0 0	
Salford Corporation Gas Depart.:			E. E. F. ...	10 0 0	
One year's interest on Mortgage for £600 at 3½ per cent., less tax	19 19 0		C. S. S. and Family	5 0 0	
352 days' interest on the like at ½ per cent., per ann., less tax	0 13 5		A. A.	26 0 0	
Dwelling House Improvement Department:—			E. W.	12 0 0	
317 days' interest on Mortgage for £600 at 3½ per cent. per annum. less tax	17 10 5		K. E.	13 0 0	
Income Tax reclaimed to 5th April, 1908:	10 15 9		E. G.	13 0 0	
Bank Interest	2 3 0		A. R.	5 0 0	
		167 13 9			100 0 0
			Balance at Bankers		173 16 8
		£876 6 2			£876 6 2

INVESTMENTS.

Mersey Docks and Harbour Board, 3½ per cent. Bond	repayable March 27, 1911	£600
,, ,, ,, 3½ ,, ,,	,, July 1, 1914	1300
Manchester Corporation Improvement Department, 3⅝ per cent. Mortgage	,, March 25, 1913	800
,, ,, ,, ,, 3½ ,, ,,	,, Sep. 29, 1909	900
Salford Corporation Gas Department 3½ ,, ,,	,, Jan. 13, 1911	600
,, Dwelling-house Improvt. Dept. 3½ ,, ,,	,, Feb. 17, 1911	600

We have examined the above written account and securities and certify the same to be correct

ALFRED H. POWNALL, F.C.A.
HARRY D. CHORLTON,

27th February, 1909.

The National Veterinary Benevolent and Mutual Defence Society.

The annual meeting of the Society was held on Wednesday, March 10th, 1909, at the Grange Hotel, Aytoun Street, Manchester, W. A. Taylor, Esq., F.R.C.V.S., President, in the chair. Present: Messrs, E. Faulkner, A. W. Mason, J. Clarkson, F. W. Somers. J. B. Wolstenholme, J. McKinna. W. Woods, S. Wharam, G. H. Locke, E H. Stent, and the Secretary,

The Secretary read circular convening meeting.

The minutes of the last annual meeting having been printed and circulated, were taken as read, and adopted.

Letters of apology for non-attendance were received from Messrs. H. J. Dawes, J. Abson, W. Carless, A. L. Butters, F. J. Taylor, and Prof. W. O. Williams. Telegram also received from Mr. F. J. Taylor resigning his position as member of Council, through illness, which was accepted with regret.

The President, in a few words, alluded to the satisfactory financial condition of the Society, and again referred with regret to the poor influx of new members. It seemed to him that the younger members of the profession were disregarding the advantages of a very helpful association. He did not desire to anticipate the respective reports of the Hon. Treasurer and Secretary, and called on them for their statements.

The Secretary, in presenting his annual report, congratulated the members on the continued usefulness of the Society, but regretted that the membership was so small, as compared with the number in the profession. We have had one or two resignations, and lost several members through death during the last twelve months, two of which I may specially mention. I refer to the late Wm. Whittle and F. W. Wragg—both gentlemen being formerly members of Council, and always took a very warm interest in the Society, and never lost an opportunity of pressing its claims upon the profession. Mr. Whittle was a life governor of the Benevolent Branch. We have also deleted our numbers considerably by crossing out the names of those in arrear, according to resolution passed at the last annual meeting, and although we have enrolled ten new members during the year, our membership on December 31st, 1908, stood at 254, as against 277 last year.

Your Council have had to treat with five fresh cases of defence. Three of which have been amicably settled, the remaining two pending, thus proving the absolute necessity of the existence of the Society; independent of the many calls made upon our Benevolent Fund. I have received several letters from recipients from the latter fund, expressing their thanks for the assistance rendered them by the Society in time of great need and distress.

The Treasurer, in his report, stated that there were 254 members on the books on the 31st December, 1908. of whom 20 members were in arrear, to the total amount of £14 14s. Twenty-six members had been struck off the roll for non-payment of subscriptions, and the total amount of claim abandoned was £42 10s. 6d. The sum of £177 11s. 2d. had been spent in law costs in defence of members, and the sum of £100 had been disbursed from the Benevolent Fund. The balance at bankers, December 31st, 1908, was:—Defence Branch, £583 11s.; and Benevolent Branch, £173 16s. 8d.; Invested Funds, £4,800. The total funds in both branches being £5557 7s. 8d.

Mr. McKinna proposed, and Mr. Mason seconded the resolution that the names of the members deleted be entered in the minute-book, and that the several reports be received and adopted. Carried.

Mr. Wolstenholme proposed and Mr. Wharam seconded the resolution, that the sum of £50 out of the Defence Fund be deposited with the Manchester and Salford Savings' Bank, at call or seven days' notice, at 2½ per cent., per annum, and £500 in the special investment department at 3 per cent., per annum; one month's notice for repayment. Carried.

Mr. Wolstenholme intimated that on September 29th the sum of £900 invested with the Manchester Corporation Improvement Department is repayable, and asked if such was to be reinvested. It was resolved that the best terms be made with the Companies for re-investment.

The Secretary having read the attendances of members of Council, the following were elected:

President.—Mr. W. A. Taylor, F.R.C.V.S., Manchester.

Vice-President.—Mr. W. Woods, F.R.C.V.S., Wigan.

Treasurer.—Mr. J. B. Wolstenholme, F.R.C.V.S., Quay Street, Manchester.

Hon. Sec.—Mr. Sam. Locke, M.R.C.V.S., Grosvenor Street, Oxford Road, Manchester.

Council.—Messrs. A. L. Butters, M.R.C.V.S., London; J. Clarkson, M.R.C.V.S., Garforth, Nr. Leeds; E. Faulkner, M.R.C.V.S., Manchester; Tedbar Hopkin, F.R.C.V.S., Manchester; A. Lawson, M.R.C.V.S., Manchester; A. W. Mason, F.R.C.V.S., Leeds; J. McKinna, M.R.C.V.S., Huddersfield; W. Shipley, F.R.C.V.S., Great Yarmouth; F. W. Somers, M.R.C.V.S., Leeds; Henry Sumner, M.R.C.V.S., Liverpool; J. W. Coe, F.R.C.V.S., Stoke-on-Trent; and R. C. Trigger, F.R.C.V.S., Newcastle-under-Lyme.

Auditors.—Messrs. Butcher, Litton, Pownall and H. Chorlton, M.R.C.V.S., Manchester.

Mr. McKinna proposed, and Mr. Faulkner seconded a vote of thanks to the Chairman, Vice-chairman, Treasurer and Secretary for their services.—Carried.

Mr. Stent proposed, and Mr. G. Harry Locke seconded a vote of thanks to the Council.—Carried.

Sam. Locke, *Hon. Sec.*

Unfair Trading.

From a column of *The Farmers' Gazette*, Dublin, we quote the following two paragraphs. They appear to us to have a connection even closer than their position in the paper.

"The various Veterinary Medical Associations throughout the country seem bent on making matters unpleasant for their clients the farmers. Not content with promoting a Bill to amend the Veterinary Surgeons' Act, and which, if passed—and it will doubtless be passed unless strenuously opposed by agriculturists—will preclude farmers, under heavy penalties, from performing even the most trifling operations on their own animals, they now in some cases wish to boycott makers of veterinary instruments who sell such to non-professional people. It is reported that one member of the Yorkshire Veterinary Medical Association recently stated that "The only thing was to boycott the firms who sold the instruments to their clients, thus doing the profession out of work." This is an example of the close "ring" with which these practitioners seek to hedge round their profession at the expense of farmers, and is on a par with the action of their Central College in seeking to prevent perfectly competent and qualified men trained at that College from practising if their names are not registered (on payment of a guinea fee) every year on the books of the College. With equal justice farmers might boycott every veterinary surgeon who breeds horses or cattle, or who tills even an acre of land. The ethics of this profession seem past finding out, but their Bill has apparently every chance of passing unless farmers resolutely oppose it at every stage and instruct their Members of Parliament to vote against it at every opportunity—not because of any antipathy to the veterinary profession, but as a matter of principle and against an unwarrantable interference with the farmer's own rights and liberties."

"For the improper use of the Irish Trade Mark in connection with some handkerchiefs exposed for sale in his window, a London shop-keeper was fined £20 with £20 costs on Tuesday last. An expensive lesson!"

THE CHICAGO STOCKYARDS REVISITED.

By the Special Sanitary Commissioner of The Lancet.

THE INCREASED NUMBER OF INSPECTORS.—HOW VETERINARY SURGEONS ARE MADE TO "SPEED THE PACE."—WANT OF DIGNITY IN THE PROFESSION.

To analyse the new laws that have been enacted in response to the agitation against the Chicago stockyards would take much time and space, and is not within the design of these articles. I am anxious to record my personal impressions on revisiting the stockyards now that better laws exist and improvemente have been effected. But laws are not of much use unless there is an effective machinery for putting them into force. At the commencement of the year 1906 it was publicly stated that the Federal Government of the United States employed in the packing-houses of the entire country a total of 411 inspectors, and it was then calculated that if these inspectors were on duty for eight hours during 300 days in the year they would have to examine 105 animals per hour. Dr. A. D. Melvin, Chief of the Bureau of Animal Industry, last October very courteously wrote to me, saying:—

I shall take pleasure in giving you the following figures concerning the Federal meat inspection. This inspection is conducted at 338 establishments at which animals are slaughtered. The total force employed numbers 2290, of whom 702 are veterinarians. The force at Chicago numbers 344, of whom 108 are veterinarians. These figures do not include clerks.

This simple statement of fact is eloquent, and shows that much has been accomplished in a short time. Nevertheless and in spite the increase of the staff I could not but feel scandalised when I saw the manner in which the veterinarians and inspectors were made to work. The dignity of a scientific profession is entirely sacrificed to the necessity, or imagined necessity, for speed, and it is difficult to do good professional work under completely faulty conditions. Highly qualified men of science are made to hustle along in semi-darkness through filth and slush, ever "speeding the space," the victims of a spirit of rush by which some efficiency must be lost. The giant engine is concealed in the darkness below ever churning and churning, turning hundreds of fly-wheels, transmitting its power to thousands of little wheels on which animals both dead and alive are suspended and move forward among the butchers, the dressers, and the skinners. While these animals, as they travel along, are being killed, flayed, and cut open the veterinary surgeon follows and inspects. So that this inspection shall not occasion any delay the labour is subdivided. The glands of the neck are hastily felt as the animal passes the first inspector; the viscera as they are cut out glide down a slope in front of a second inspector; and, finally, the carcase is looked into after the viscera have been removed as it passes the third inspector. The viscera of pigs have to be examined with such rapidity that a relief veterinarian stands behind the inspector to help him in case of exhaustion and delay. There was something so degrading about this unseemly haste that I could not help reflecting on the old condition of slavery in the Southern States, and wondering whether stricter servitude could have happened there and then. It was only necessary to place a man with a whip behind some of the veterinary inspectors to have a picture of slavery worthy of "Uncle Tom's Cabin." That ignorant immigrants should be driven to earn their living in revolting circumstances is as deplorable as it is inhuman, while every country has its way, or more than one way, of oppressing the hungry operative. These, alas, cannot help themselves. But surely such is not the case with members of a learned profession who have the honour of representing, as government functionaries, the wealthy United States of America. It is high time the veterinary surgeons in the employ of the United States Government should insist on being treated with due consideration, should refuse to be hurried in the way that they now are, or to do their work in dark, crowded, unclean places. They should insist on having all the leisure necessary to pause and to deliberate over any doubt that may arise in their minds, instead of having, as at present, to keep pace with a machine. Also how can science progress if a scientific man is, by the subdivision of labour, kept all the year round doing exactly the same detail of post-mortem examinations? Veterinary inspection, as I saw it, clearly serves useful purposes, but it can only be really efficient by alteriug the conditions of work.

On the killing floor for large animals the veterinary surgeon has to walk up and down examining the viscera. On one killing floor this meant, I was assured, that on ordinary days the inspector in going backwards and forwards walked from seven to eight miles, and when there was a great rush of work he might have to walk some ten miles. My general impression of the killing floors is that, on the whole, more light and air are admitted than used to be the case. There still remain many dark recesses and wide spaces where artificial light continues to be necessary even during the daytime, but there is real improvement. Many impervious bricks are now employed so as to render the floor watertight, and if it is suggested that this is not due wholly to a newly acquired consideration for public welfare the result is the same. The impervious floors prevent the contamination of the subsoil, and at the same time facilitate the collection of a larger quantity of blood, fragments, and grease that constitute marketable and valuable by-products. While the work is going on these floors are not flushed and washed every time they are soiled. They remain, at least to the end of the day, stained with blood and grease. The atmosphere becomes close, superheated, damp, stuffy, and ultimately foul odours predominate. There has been some improvement, but we are still far removed from the German standard of aseptic construction and management.

ARMY VETERINARY SERVICE.

Extract from *London Gazette*,
WAR OFFICE, WHITEHALL, March 30.

TERRITORIAL FORCE. UNATTACHED LIST.

Vet.-Lieut. Henry Anthony, from the Pembroke I.Y., to be Vet.-Lieut., with precedence as in the Imperial Yeomanry. Dated April 1, 1908.

Capt. R. C. Matthews, Army Veterinary Corps, has been appointed to the Curragh, and will be replaced at Cahir by Capt. H. Gamble.

OBITUARY.

E. J. CARROLL, M.R.C.V.S., Gov. V.S., Umtali, South Rhodesia. Graduated, New Edin: May, 1893.

Mr. Carroll died on January, 26th ult.

ANDREW MITCHELL, M.R.C.V.S.
Edin: Nov., 1879.

Mr. Mitchell died on March 9th, at 23 Lincoln Grove, South Manchester, from broncho-pneumonia. His age was 80 years.

COMMUNICATIONS AND PAPERS RECEIVED.—Messrs. S. Locke, H. Taylor. Capt. A. Olver. *The Carlisle Patriot.*

Royalty's Dog Doctor.

Mr. Alfred Sewell.

Few dog shows of any importance are held without the King or Queen, or both of them, being represented. At Cruft's Dog Show, held last week at the Agricultural Hall, the Queen exhibited three of her magnificent Borzois, the famous "Sandringham Moscow," and the two basset hounds "Sandringham Loo" and the celebrated champion "Sandringham Dido." During the show the lady Dido submitted with a good grace to the always trying operation of having her portrait painted.

In order that the Royal dogs may be well looked after, the kennels at Sandringham and Buckingham Palace are placed under the supervision of a veterinary surgeon, the office being held by special appointment. The gentleman who holds this post is Mr. Alfred Sewell, M.R.C.V.S., one of the greatest of living authorities on the ills to which (dog) flesh is heir to. Many hundreds of valuable dogs are housed in the Royal kennels, each section having its own kennel-men and its own attendants.

Dogs of Fashion.

Another high post which Mr. Sewell fills is that of surgeon of the Kennel Club; and he is also honorary surgeon to the Animals' Hospital and Our Dumb Friends' League. He pays a daily visit to the hospital, and when a special operation is necessary, the suffering dog is removed to his own operating theatre in Elizabeth Street. To the consulting surgery in Elizabeth Street comes the world of fashion, with footmen carrying sick dogs of all breeds and sizes. It is is curious to notice that the Royal Warrant appointing Mr. Sewell "Canine Surgeon to the King" is issued by the Keeper of the Privy Purse, and the warrant for the similar appointment to the Queen is issued by the Lord Chamberlain.

King Edward and "Cæsar."

On the mantelpiece of the surgery is a small terra-cotta statuette of "Jack," the King's dead favourite terrier. Here is a story showing how the King's consideration is extended to his dogs. The incident occurred when King Edward was at Marienbad last year. One morning Mr. Sewell received an urgent cable stating that the dog "Cæsar" was suffering great pain, presumably from rheumatism, and would he immediately prescribe and advise. Mr. Sewell, of course, cabled back instructions, and learned later that he had been successful in his treatment.

The Tsar's Dogs.

Every year Mr. Sewell makes several visits to St. Petersburg to examine the dogs of the Tsar; and he is frequently running over to Paris and Berlin to attend some dog patients owned by wealthy English, French, and German families. Mr. Sewell is constantly recommending to his clients the advisability of giving their sick dogs a change of air—a climatic tonic. He always puts this principle into practice: when going away for a holiday he is invariably accompanied by his animal pets—his dogs, his cats, his ponies, several monkeys, and an old parrot.

And whether the animals are sorry, sick, or well, the change of air is certain to benefit them tremendously. On several occasions the King's dog doctor has ordered and despatched dogs suffering from lung troubles to the Riviera and to Egypt. In one case a very wealthy lady consulted Mr. Sewell about three pets dogs, each valued at more than a £100, and he recommended Bournemouth, and to Bournemouth they were duly sent in the charge of special attendants.—*M.A.P.*

DISEASES OF ANIMALS ACTS 1894 TO 1903. SUMMARY OF RETURNS.

Period.		Anthrax.		Foot-and-Mouth Disease.		Glanders (including Farcy)		Rabies. Cases Confirmed.		Sheep Scab.	Swine Fever.	
		Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Dogs.	Other	Out-breaks	Out-breaks.	Slaughtered *
GT. BRITAIN. Week ended March 27		24	82			16	71			14	33	332
Corresponding week in	1908 ..	31	38			13	62			17	34	261
	1907 ..	22	26			17	40			14	43	393
	1906 .	17	30			25	53			9	27	143
Total for 13 weeks, 1909		359	522			153	522			372	366	3209
Corresponding period in	1908 ..	321	441	3	112	213	723			571	398	1906
	1907 ..	255	327			242	552			345	475	2470
	1906 ..	258	373			286	540			244	235	1047
Board of Agriculture and Fisheries, March 30, 1909.								Parasitic Mange. Outbreaks.				
IRELAND. Week ended March 21		..	..	..	..	.	..	1		8	..	..
Corresponding Week in	1908 ..	1	4	..	..	..	..	1		11	3	92
	1907 ..	..	..	..	..	..	..	1		3	2	22
	1906 ..	..	..	..	..	..	..	1		4	..	..
Total for 12 weeks, 1909		1	1	..	..	..	..	28		197	8	71
Corresponding period in	1908 ..	3	6	..	..	..	..	12		218	35	855
	1907 ..	..	..	..	..	..	..	29		126	39	690
	1906 ..	2	2	..	..	2	7	23		115	9	214

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, March 24, 1909

NOTE.—The figures for the Current Year are approximate only.

* As Diseased or Exposed to Infection